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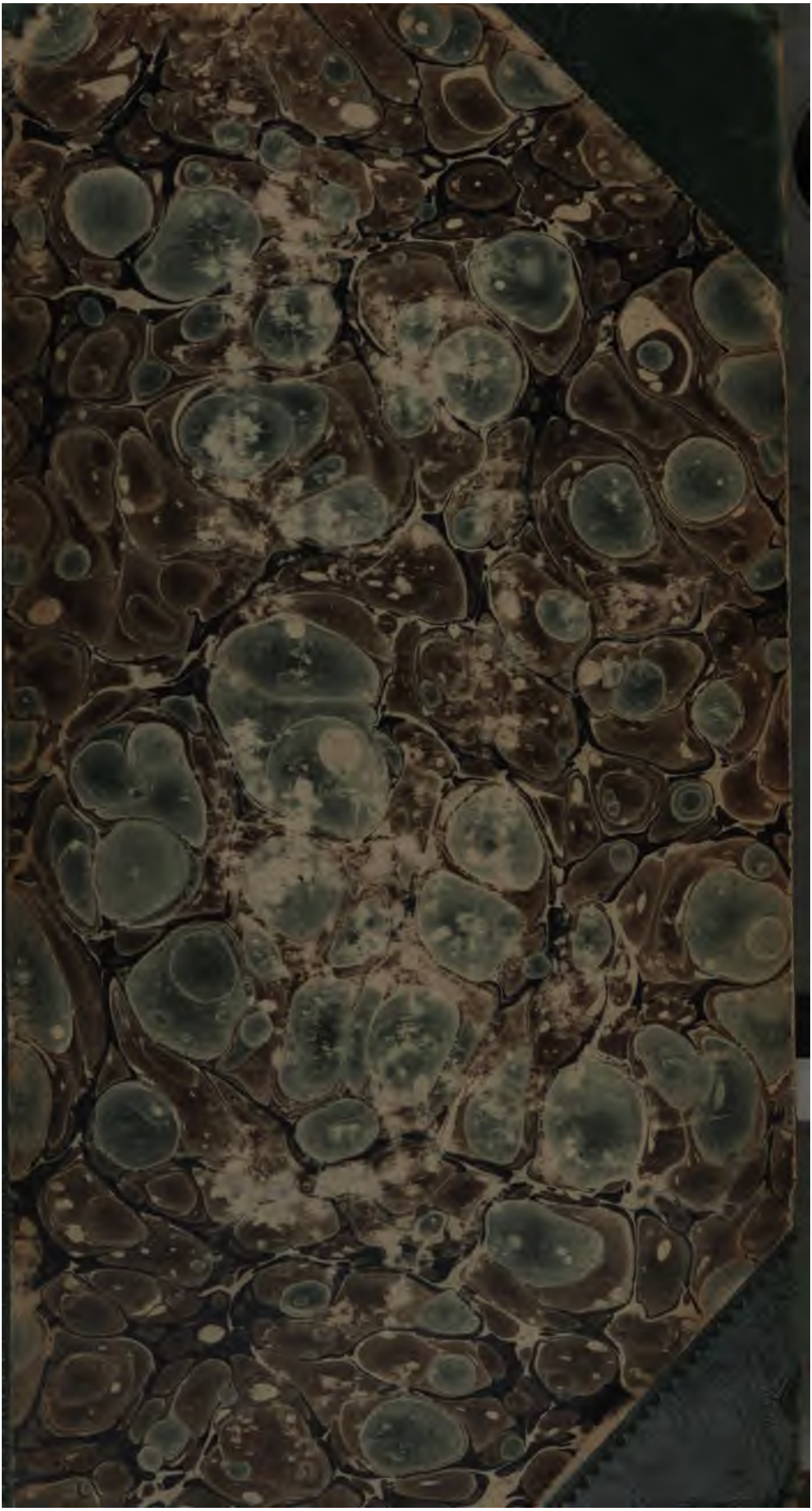

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THE

GARDENER'S MAGAZINE,

AND REGISTER OF RURAL & DOMESTIC IMPROVEMENT.
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For GARDENING And GARDENERS
VOL. VII.
1831.

CONDUCTED

By J. C. LOUDON, F.L.S. H.S. &c.

AUTHOR OF THE ENCYCLOPÆDIAS OF GARDENING AND OF AGRICULTURE, AND
EDITOR OF THE ENCYCLOPÆDIA OF PLANTS.

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PREFACE.

The principal improvement introduced in this Seventh Volume of the Gardener's Magazine is, the collection into one list, in each Number (p. 344. 503. and 615.), of all the plants mentioned in that Number as introduced to our gardens, but which are not included, or are mentioned under a different name, or imperfectly described, in the *Hórtus Británnicus.* This list is prepared and printed with a degree of care and accuracy, and at an expense, which, it is but justice to ourselves to state, has not hitherto been equalled in any botanical publication in this or in any other country. At the end of every year these lists will be rearranged, and published separately on the 1st of the succeeding February, as a Supplement to the *Hórtus Británnicus.* The Supplement for 1831 will appear on February 1. 1832.

In the course of the publication of this Volume, the Conductor has had an opportunity of personally ascertaining, during an extensive tour, the state of gardening, and the wants and wishes of a number of his readers, in the central and northern counties of England, and in the west of Scotland. He has been confirmed in his intention of continuing the reports of the Provincial Horticultural Societies, subject to the modifications laid down in p. 626. He has ascertained, beyond all doubt, that gardening has made much more progress during the last quarter of a century as an art of culture than as an art of design and taste; and that, in consequence, the wants of his readers, whether gardeners, their employers, or amateurs, are chiefly in the department of taste; in other words, in landscape-gardening and garden architecture.

While the newest varieties of fruits, culinary vegetables, and flowers have found their way almost every where, the same commonplace manner of laying out shrubberies and flower-gardens (see p. 400, 401, and 402.) which existed at the end of the last century is still prevalent. Trees in parks are planted in the same formal belts and clumps, or scattered singly over the surface in what is familiarly called dotting. The same indiscriminate mode of mixing trees in plantations still prevails; and, in regard to thinning and pruning (which, however, have more to do with profit than with picturesque effect), there is not one proprietor in twenty that has the courage to set about either operation. The order and keeping of gardens and pleasure-grounds seem, on the whole, to have retrograded rather than advanced; partly because, while the extent of most places has been increased, the number of hands allowed for keeping them has been diminished; but partly, also, from misapplied exertion and labour on the part of the gardener, and from his, in almost every case, confounding the means of high order and *keeping* with the end. This we have explained in p. 544, 545, and 546. On the part of the employers of gardeners, the desire for extent, quantity, and temporary display has eclipsed the love of excellence, select beauty, and permanent value. Thus, while a sort of diseased feeling in favour of possessing thousands of house plants in pots, and of displaying great quantities of showy articles, such as georginas, salvias (excellent in moderation), &c., on lawns, has taken place, the permanently valuable novelties, such as new species of American or other timber, and ornamental trees and beautiful shrubs, which would remain distinguishing features in the general woods and plantations of an estate for generations, are neglected. Petty, temporary, and minute improvements, in short, supersede such as are grand, comprehensive, and permanent. With respect to order and keeping, we can truly say that we have been disgusted, in even the best places, at seeing so much labour thrown away on what can have no effect but that of creating a demand for more labour. We allude in particular to operations on walks and their edgings, and on dug borders in shrubberies, as explained in p. 404, 405. and 543.; but we might also include different fanciful modes of training fruit trees, of forcing fruits and flowers, and of cultivating exotics, which serve little purpose but that of consuming labour in procuring imperfect productions, or in counteracting nature. There are some gardeners who are as fully aware of these things as ourselves; but they have declared to us, that, if they were not to hoe and rake walks, pare their edges, and dig shrubberies as their neighbours do, they would be considered neglectful of their duty to what was under their charge, and would soon be dismissed from their situations. This has obliged us to be more particular (see p. 548.) than we otherwise should have supposed it necessary to be.

Convinced as we are that want of taste is the defective point both in gardeners and their employers, what is our duty as Conductor of the Gardener's Magazine? Obviously, to direct our attention in an especial manner to gardening as an art of design and taste; in other words, to Landscape-Gardening and Garden Architecture. We have also determined to continue the publication of our *Illustrations* of these subjects, with the variations mentioned in p. 720. For the same reason, we shall in future, in the departments of culture and management, take more pains to show the difference between a profitable application of labour, and the waste of labour.

In our endeavours to diffuse the knowledge wanted for these purposes, we shall be less anxious to present formal and systematic treatises, than gradually and incidentally to develope and illustrate particular points. We have hitherto done this in the notices of our tours, and we are convinced, for the reasons assigned in p. 648., that this is by far the best plan for all who have not had their minds previously prepared for deriving information from condensed systematic treatises, which must necessarily be, to a certain extent, metaphysical.

J. C. L.

Bayswater, Nov. 14. 1831.

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THE
GARDENER'S MAGAZINE,
FEBRUARY, 1831.

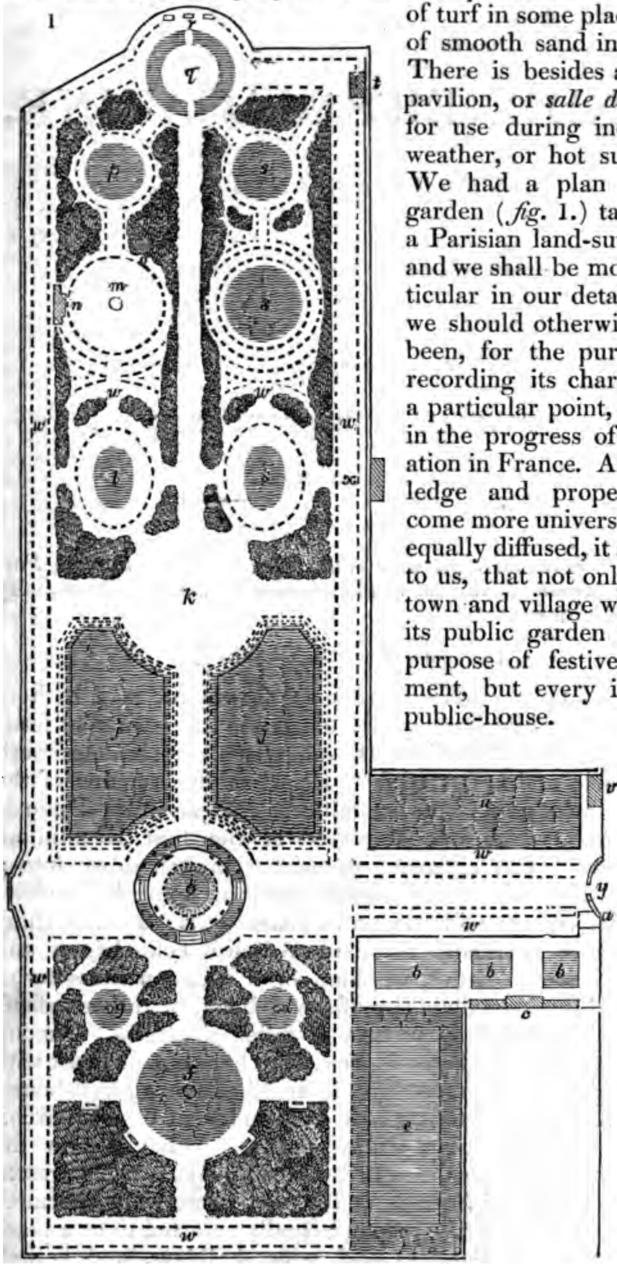
PART I.
ORIGINAL CORRESPONDENCE.

Art. I. *Notes and Reflections made during a Tour through Part of France and Germany, in the Autumn of the Year* 1828. By the Conductor.

(*Continued from* Vol. VI. p. 649.)

Sept. 11. 1828. — *The Garden of Sceaux*, or, as it is there called, the Public Park at Sceaux, is the last garden of festivity which we shall notice. It is situated about six miles south from Paris, and is formed from a part of the remains of the grounds belonging to the magnificent château of the Duke de Penthièvre, which was destroyed at the first Revolution. The rest of this extensive domain is broken down into a number of handsome villa residences, occupied by bankers and other citizens of Paris, and by strangers. Some of these villas, more especially those of Admiral Tchitchagoff and the Comtesse de Bruce, we shall have occasion hereafter to notice. The immediate site of the château, or rather palace, exhibits a melancholy picture of fallen greatness. Among the principal appendages we could not help being struck with the bridge over the moat, with its accompanying guard-house, and a small battery for cannon, in magnificent Grecian architecture, and remaining almost entire. What is now the garden of Sceaux was modified so as to adapt it to its present use by a citizen of Sceaux, and it now, as we were informed, belongs to that town. It is principally resorted to as a place for dancing, on Sundays and other holidays, and is well calculated for that purpose from the openness of its areas of turf in some places, and of smooth sand in others. There is besides an open pavilion, or *salle de danse*, for use during inclement weather, or hot sunshine. We had a plan of this garden (*fig.* 1.) taken by a Parisian land-surveyor; and we shall be more particular in our details than we should otherwise have been, for the purpose of recording its character at a particular point, or æra, in the progress of civilisation in France. As knowledge and property become more universally and equally diffused, it appears to us, that not only every town and village will have its public garden for the purpose of festive enjoyment, but every inn and public-house.

1



a, Porter's lodge. *b*, Kitchen-garden of the porter, bordered by flowers and shrubs. *c*, Range of baths.

d, Circular platform of turf, raised about 18 in. above the general surface, with a circle of columns supporting an ornamental entablature, and with a handsome antique vase in the centre, all of marble.

e, Piece of water. *f*, Circular platform of turf, with a marble column in the centre, surmounted by an antique vase.

g, Platform of turf, corresponding with that at *d*.

h, Elevated platform, ascended to by seven steps, with a circular colonnade of clipped lime trees, and a handsome statue in the centre.

i, Circle of turf, surrounded by a border of flowers.

j j, Parterres of flowers, with a lawn in the centre, the different compartments of flowers separated by walks 2 ft. in width; the beds of flowers about 3 ft. wide. The beds are planted chiefly with roses, pinks, marigolds, and China asters, with some georginas and sunflowers.

k, Circle of smooth sand. In this circle any party bringing their own music may get up a dance, which they may conduct in their own way, so as they do not disturb the public peace. Under a pavilion (*m*), to be hereafter described, the dance must go on according to certain rules, agreed on, printed, and published with the approbation of the Mayor of Sceaux.

l, Oval of turf, for the swings and roundabouts (*chevaux de bois, &c.*).

m, Pavilion for dancing, or *grande salle de danse couverte*, 100 ft. in diameter, with a column in the centre, on which rest the rafters of the roof converging from the circumference. Around this pillar, at some height from the ground, are fixed the seats for the orchestra.

n, Coffee-house for refreshments of different sorts.

o, Place for umbrellas and walking-sticks. *p*, Circle of turf.

q, Circular area of sand, sunk below the general surface, and surrounded by a sloping bank of turf, with a border of flowers along the upper edge.

r, Terminal arch, with a handsome statue under it.

s s s, Grass-plots, surrounded by lime trees, cut so as to resemble arcades; the trunks of the trees representing the columns, and their branches at the height of 10 ft. the imposts and superincumbent arches terminating in a projecting cornice.

t, Water-closet (*cabinet d'aisance*).

u, Lawn; the boundary wall is here covered with fruit trees and roses, and close under it there is a border of flowers. *v*, Restaurateur.

w, Rows of lime trees, clipped so as to form arcades in the direction of their length, the thickness of the arch or wall being about 2 ft.; the opening or span of the arch 6 ft., and sometimes more. It is to be observed that these lime trees do not over-arch the walk like avenues, but merely produce a species of architectural shade.

x, House containing the chairs and tables which are set out under the trees during the fine season. *y*, Entrance from the street of Sceaux.

The plan of this garden may be considered a very good representative of all others of the festive kind in France; for the forms and dispositions of architectural art are but few, and they necessarily produce great sameness, when compared with the unlimited forms of nature, or even with the imitations of those forms. But for a festive garden, the variety and intricacy of natural scenery is by no means so well adapted as the simple and determinate forms, and the ample space, of the geometric or architectural style. Hence it is, that by a species of instinct, the result of necessity, this style has been adopted, at least as far as we know, in all the gardens of this description in Europe. It is essential to a festive garden that the company should assemble together in masses; and, for containing these masses, it is not only requisite to form appropriate spaces, but to connect these with subordinate and not far distant arrangements, in the same way as the living-rooms of a house are connected with its different servants' apartments and offices. For such requisites the architectural style is peculiarly fitted; both from its determinate forms, and its direct, compressing, and systematic disposition of those forms. The natural style, on the other hand, depends for its effect on qualities the very opposite: on circuitousness, "the path that still begins and never ends;" indefiniteness, —

> "He gains all points, who pleasingly confounds,
> Surprises, varies, and conceals the bounds;"

the concealment of art, and its employment, not for its own display, but for the imitation of nature. Trying the garden of Sceaux by these principles, it will be found judiciously adapted for the purposes for which it is intended, and therefore it may be considered as perfect of its kind.

This garden is used by all ranks in and about Paris. Whoever is decently dressed is admitted to the grounds; and whoever can pay a few sous for the music may dance in the pavilion. We have been informed by residents in the neighbourhood, of whom there are several whose gardens we shall have occasion to describe, that it is no uncommon thing to see an equipage of the first class arrive with a mother and her family, who descend and walk to the pavilion, and, after dancing there a few quadrilles with whatever citizens they may meet, go back to their carriage again, and drive off. In this case, the exercise of dancing is obviously taken as a recreation or refreshment; just as the ladies of an English family of rank would drive to the door of Kensington Gardens, alight, walk round the gardens, return to their carriage, and drive home again. In fact, dancing in France is as much a necessary of life as walking in England; and, among the highest classes, it is substituted for that exercise. Indeed the French, though fond of flowers and fruits, are not fond of gardening; and a lady of fashion, whether in Paris or at her country seat, is never seen walking in what, in England, would be called the pleasure-ground. Both men and women, as we have already observed (Vol. V. p. 642.), when they wish to take exercise in their own grounds, resort to the *balançoire*, or the *cheval de bois;* in short, to swings, see-saws, and roundabouts. Much as we admire the French, we cannot approve of this want of taste for rural recreations, and, especially, for the beauties of nature and of gardening. We have no doubt, however, that when the men become less military, and have directed their attention more intensely to agriculture; and when natural history shall have been more attended to in the education of women, the society of ease and leisure in France will have similar habits and tastes with similar society in England: for it ought never to be forgotten that man is essentially the same animal, under whatever climate, government, or degree of civilisation he may be found.

The Garden of Sceaux is so numerously frequented, that the mayor of the town thinks it necessary to publish annually two sets of regulations; one for the exterior, and the other (before alluded to) for the interior, police of the ball. These regulations are printed on large sheets of paper, and affixed to different places, both within and without the gardens. In a mixed society of persons of different ranks, and of different degrees of education, and especially among a people naturally so gay and fiery as the French, it is necessary that the restraints of civilisation should be clearly defined; in order that the rules of etiquette for every occasion may be understood by all, and promptly enforced by opinion, as well as by authority.

Sept. 28. — *The Bois de Boulogne* is a flat sandy surface, intersected in all directions by straight roads, bordered with trees. Even where the boundary of the wood had formed by nature, or by accident, an irregular line, the surrounding road has been reduced, by engineers, to lines recognised by their profession. The greater part of the trees composing this wood are of kinds indigenous to France, and are chiefly oak, birch, and hazel, though art has added some species of exotic trees in different places; and among these are cedars, different species of pines, and American oaks. The indigenous wood is chiefly undergrowth; and there is a number of open glades in it, which form the chief source of variety to the spectator looking from the straight avenues. To those accustomed to compare, in their mind's eye, the effects of winding roads and straight roads, the sameness of the *Bois de Boulogne* is intolerably tiresome. In proceeding along a winding road, the scenery meets the eye as you advance, and is agreeably presented to you in succession, without the trouble of turning the head to either the right or left to look at it. In proceeding along a straight road, that road is continually before you, and the scenery can be only observed, not enjoyed, by turning the head to one side or the other. It is by no means asserted that straight roads are entirely destitute of beauty, independently of their furnishing, on an even surface, the shortest line from one point to another. When such roads are wide and long, and bordered by trees, the view along them is always grand; and, when the scenery on each side is naked and unsightly, it is rendered tolerable by the framework of the stems of the row of trees through which it is seen. This, however, is all that can be said in recommendation of straight roads or avenues as objects of original beauty. As objects of the beauty of artificial associations, open avenues, from leading to Gothic castles or châteaux of the feudal times, and high over-arched avenues from exciting in the mind the idea of cathedral ailes, are of acknowledged effect: but beauties of this sort have no reference to the avenues of the *Bois de Boulogne*, which, placed as they are, can only be considered as a proof of the poverty of mind, in matters of rural taste, of the age in which they were produced. It is remarkable, that neither in the *Bois de Boulogne*, nor in any of the woods, natural or artificial, in the environs of Paris, as shown by the map now before us, is there a single circular road. Two or three circles in the *Bois de Boulogne*, of as large a diameter as the width of the wood would admit, would have been a wonderful relief to it. To be convinced of this, it is only requisite for a Londoner to recollect the effect of the circle in the centre of the Regent's Park. To make the most of the *Bois de Boulogne* with respect to roads, a winding road should surround it a few yards within the margin: there should be as large a circle within it as could be obtained, shaded by trees, and another large circle not shaded by trees; the former for summer use, and the latter for use during winter and the rainy weather: and there should be one or two straight avenues, open and shaded, for the purpose of passing from one extreme point to another by the shortest line, and for giving simple and grand perspectives, as well as beautiful and perpetually varying views.

But the beauty and variety of such a piece of ground as the *Bois de Boulogne* will depend very much upon the manner in which it is planted. Relatively to surface, we would leave numerous irregular glades, some very large, others small; relatively to the roads, many of these glades should meet the eye from them in such a way as to produce a succession of varied landscape, and convey an idea of great depth of scenery; relatively to trees and shrubs, we would employ all the most hardy of those species which can endure the open air in France; and relatively to the connection of these trees among themselves, we would employ, as far as practicable, the natural system. We would, at all events, keep the trees belonging to the same natural order or tribe together, or not far asunder. In each separate straight avenue we would employ only one sort of tree, but in curved avenues several sorts; because the beauty there depends less upon succession and uniformity than in the straight avenue.

The trees in the *Bois de Boulogne*, which had attained a timber size, were nearly all cut down in 1815, when the wood was occupied by the Cossacks and other foreign troops; and those trees which now line the roads, having been planted since that period, are consequently without much shade or general effect. It is with great pleasure that we add, that, when we saw them, these roads and trees were in the very highest order and keeping.

Of the Royal Gardens, which come next in order, we shall have very little to say. In short, when we think of the Royal Gardens of Germany and Russia, we have seen very few gardens of this class, in either England or France, which we think worth looking at, or at least talking about.

Dec. 24. — *The Gardens of Versailles* are dreary beyond what can be imagined, when they are not filled with company; and there is not a spot or a corner in them to exercise the imagination, unless it be the orangery, which contains trees of upwards of three centuries old. The water-works in these gardens are too intricate and curious to be grand, and very different indeed from the two magnificent columns of water, which rise to the height of nearly 100 ft., in front of the palace of Nymphenburg, near Munich. The pleasure of walking in these gardens is materially lessened by their sloping surface, and in many parts of them by the want of shade. There is a baldness in the immediate front of the palace, which nothing can remove but an immense crowd of people; for all the arenas and courtyards at Versailles are too large for the length of the buildings, at least according to modern taste. Compared with plantations of the present day, there is a great want of variety in the sorts of trees employed; though this defect will be amply made up to those who have paid but little attention to botany, by the number and diversity of the marble statues. Notwithstanding all these, and many other observations which we could make on the causes of the little pleasure afforded by these gardens when not full of company, and of their inaptitude for being made the most of when filled, we should be sorry to see them neglected. Since they have been created at an enormous expense, let them be kept in repair for their *mérite historique;* for the moral lesson which that conveys; and for the enjoyment of the public, as a sort of superior Sceaux. The palace, since it is no longer used as a residence, might be occupied, at moderate rents, by the widows and orphans of public servants.

Some attention is still paid to the repairs of these gardens; but we observed, in several instances, hedges and trees clipped in a manner never intended by their original designer. For instance, the cones of yew on the slope to the west of the south front are made to rise from the ground at once, without the intervention of a plinth having the upper surface horizontal. The latter would be in proper architectural order (*fig.* 2. *a*); the former (*b*) is the reverse. This defect may not strike those who have not an architectural eye; but as the principles of architectural design pervade the whole of this style of gardening, and, in fact, constitute its leading principle, any obvious neglect or defiance of these principles is a deformity. Every thing ought to be what it pretends.

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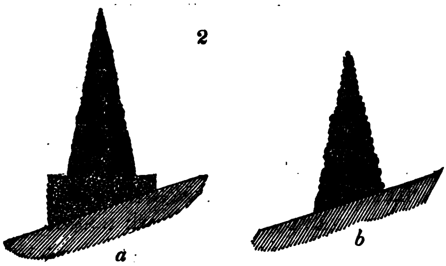

It is curious to observe, that the want of a roof parapet to the palace had begun to be felt in the time of Louis XVI.: a small part had the addition made during that king's reign; a part also during the reign of Napoleon; and a part in Louis XVIII.'s time. Charles X. also had commenced it.

The kitchen-garden belonging to the palace contains in the borders a number of tall pear trees, trained like pyramids, which M. Lemprière, the head kitchen-gardener, told us produced abundance of young wood, but very little fruit; a circumstance easily accounted for by the perpetual use of the knife. Repose is essential to fructification in all organised beings. The pear trees against the wall are trained in the fan manner; which M. Lemprière agreed with us in considering the only method of training worthy of being generally adopted by a rational gardener. M. Lemprière and two of his men were pruning these trees with a large hooked knife, and tying them to nails driven into the wall with willow twigs. They wore *sabots*, or wooden shoes, with straw buskins reaching to their knees, the ground being covered with snow; and reminded us of the figures of gardeners given in the engravings of the days of La Quintinie, and London and Wise. They were in high spirits; asked if we were "*un cultivateur*," and, on being told that we were only "*un auteur*," their distrust of book-making gardeners was honestly and freely expressed. On our asking for an explanation, we were told of a writer, who affirmed that pine-apples in Cayenne attained the weight of 30 lbs. each ! ! It is almost needless to add, that M. Lemprière had no garden library.

The forcing department of the Versailles kitchen-garden is not without interest. It is coeval with the palace, and occupies nearly two English acres, originally chiefly covered with substantially built Dutch pits, with stone copings, &c. During the time of the Revolution, of Bonaparte, and of Louis XVIII., till 1819, it was entirely neglected; and the light downy seeds of the black poplars and willows of the neighbouring woods had sprung up from the ground, and from the crevices of the walls of the pits, and attained even a timber size. We saw the remains of some of these trees, and they reminded us of Moscow, where, in 1814, we saw springing up every where, from the ashes of those ruined houses and churches which had not been rebuilt, plants of the native black poplar. Had Moscow been left to itself, that immense city would by this time have become (what the forcing-ground at Versailles actually was till the year 1819) a natural forest. About the year 1819, the trees in this forcing-ground were felled; and preparations made for forcing culinary vegetables and fruits, and growing pine-apples. The charge of this department is committed to M. Massey; who happening to be from home, we were conducted through it by his foreman (*premier garçon*), M. Grisson, a young man brought up in the neighbourhood, and who, as he informed us, never saw a pine-apple in any other garden. The descriptions of forcing-houses here used are three: first, the old massive-walled pits, immediately within the walls of which, and above the bark bed, is an earthen tube, about 4 in. in diameter, serving as a smoke flue; second, pits with walks behind, in imitation of Baldwin's (*Enc. of Gard.*, 2d edit. § 2649.), and which were built from a MS. translation of Baldwin's pamphlet; and third, common pineries, not unlike those of Kensington Gardens. The sorts of pines cultivated are chiefly the Queen obtained from Holland, and the Enville from England; but there is a number of other sorts; and M. Massey was in London, in 1829, in search of new ones, and also in order to learn the mode of heating by hot water. This French invention was actually applied to the hot-houses in the *Jardin des Plantes* before the Revolution; and is now, we understand, after being so many years forgotten, on trial both at Versailles and Paris. There are now under M. Massey's care about 1000 fruiting plants, with a due proportion of succession stocks. In one house we saw 65 plants in fruit; most of the fruit coloured, or beginning to colour. We were informed that, during the last three years, ripe pines had been supplied to Charles X.'s table every day in the year. All the pots were plunged in unmixed tan, except those in Baldwin's pits, where the tan was mixed with dung and leaves. In the tan-pit of the larger houses were tubers of the sweet potato (Convólvulus *Battàtas*), to preserve them during the winter, for the purpose of producing shoots to be slipped off, and used as sets for planting in common hot-beds, or pits in the spring. A sort of sweet potato is grown here, obtained from St. Domingo, and there called the *Quarantin;* which, as the name imports, produces tubers fit to eat in 40 days. In Europe, as well as in North America, it is found extremely difficult to preserve the tubers of the sweet potato throughout the winter. M. Massey finds it easiest to do this by keeping them in a growing state in the bark bed. Admiral Tchitchagoff's gardener at Sceaux keeps them in dry sand in a room, from which the slightest degree of frost is excluded. Kidneybeans were in a growing state, and a stock of young tomato plants ready to transplant into their pits to fruit during the winter, the fresh fruit being wanted throughout the year for soups, stews, and sauces. In a low Dutch vinery, grapes, said to be the Dutch Chasselas, were (Dec. 24.) showing blossom, which, we were told, would be expanded in a fortnight, and the fruit ripened by the end of March. Peas were growing on the floor of another house; and these, we were told, would be ready to gather about the same time. Some pits contained excellent lettuces; and we were told that, between the pits and the open garden, kidneybeans, lettuces, and tomatoes were supplied every day in the year. Strawberries are not much asked for; and, therefore, they are merely forced so as to come in by the end of March. On noticing the circumstance of so many things being calculated to come in about the end of March, we were reminded that there is such a thing as Lent: and that as Catholic devotees, like Charles X., rarely suffer meat to be seen on their tables during that season, it is an object to supply its place by rarity and variety. M. Massey received 40 sorts of strawberries from England; but, like most Continental gardeners, he greatly prefers, both in point of flavour and general usefulness, the *Frasier des Alpes*. He says that nothing can be easier than, by having quantities of these in frames to be heated at pleasure by linings, to gather ripe fruit every day in the year; and he has heard that this actually was done in Louis XIV.'s time, as we know that it now is, or *lately was*, done in some of the royal gardens of Germany. No mushrooms are grown in any of the royal gardens near Paris; because these are so abundantly produced in the stone quarries about that capital, that a private gardener would no more think of growing them in houses, or above ground, than a London gardener would think of raising his own stock of winter potatoes. There are some fig trees against the walls; and it surprised us a little to learn that the branches are bent down to the ground when the leaves drop off, and covered with earth, as at Argenteuil. Their stems are about 1½ in. thick; and the reason M. Massey's foreman gave for their not breaking, when so bent, was their being accustomed to it from their infancy! Notwithstanding the great number of fires at work in this forcing-ground, there is little or no appearance of soot or smoke; and the reason is, that wood is used for fuel. For this reason, also, 4-inch earthen pipes are found sufficient as flues; the smoke of coal, in so small a quantity as would pass along them, would not give out sufficient heat, and would, besides, soon clog them up with soot. With the clear atmosphere of a Parisian winter, wonders might be effected by these pits if they were heated by hot water.

Dec. 28. — *The Grounds of the Grand Trianon* are dull and flat: the best thing is a parterre; and, for France, even that is not good.

The Petit Trianon adjoins the other; and it is better worth looking at, having some features which recall to mind the scenery of nature, and the green turf of those happy climates which, though they have fogs, have mild winters, and no burning summers. There is an imitation of a natural rill, which, all things considered, is not amiss; though any one disposed to be severe might very well compare it to a string of sausages. The grounds, taken altogether, however, are far before any royal English garden of the same date; and, as far as water and ground are concerned, are greatly superior to the ponds and mounds like ditch-banks recently formed in the grounds of Buckingham Palace. The latter is, perhaps, richer in exotic shrubs; but the effect of these is so overbalanced by the prevalence of tall elm trees, that, even in this respect, we greatly prefer the *Petit Trianon.*

As the Gardens of Louis Philip of Orleans, as well as those of Bagatelle, were private gardens when we saw them, we shall not include them under this department of our tour; and therefore we proceed, as proposed (Vol. VI. p. 1.), to

Commercial Gardens. The principal nurseries in France, for timber trees, hedge plants, and fruit trees, are at Orleans about 90 miles, and Vitry about 5 miles, from Paris. The growers are not, like the English nurserymen, a few individuals who have acquired large capitals; but a numerous class of small proprietors, who cultivate their own soil, and bring their trees to market in the same manner as is done with other garden produce. The more rare articles of the trade are grown almost entirely by Paris nurserymen, and a few others in the very largest towns; and when the former have an order for fruit or forest trees, they procure them from the country, or attend the next weekly tree market at Paris or Orleans. It must be confessed that this is a very bad method of selling trees; for, after the roots have been two or three days exposed to the air in severe weather, the trees, if they grow at all, have little chance of thriving. We attended at the tree market in Paris on three successive market days in December, and purchased, at a remarkably low rate (Photínia serrulàta, grafted, 1 franc each; and common laurels grafted on cherry stocks, 6 ft. high, 2 francs), as many trees and shrubs as were required to plant a small residence, the laying out of which was committed to our care. We had them carefully planted, staked, and watered: but, nevertheless, we have since been informed by the proprietor, Sir John Byerley, that they almost all died. The exposure of goods of any description at fairs and markets is a characteristic of a particular stage in the progress of the population of a country, and of its civilisation. When capital becomes abundant, this practice is abandoned; and though by private purchase the consumer may sometimes pay higher, yet he obtains a more valuable article, and is, in the end, a gainer. In no branch of trade is this more true than in the nursery business.

Vitry may be described as a village of nurserymen; a circumstance sufficiently indicated by the following signs to the public-houses there: *Au rendezvous des pépiniéristes; Au bon pépiniériste; Café des pépiniéristes*, &c. It is estimated that there are about 400 growers here and at Choisy, the adjoining village; each of whom cultivates his own property, and grows trees, alternately with corn, forage crops, and culinary vegetables, in the open or enclosed fields. The quantity of ground covered at one time by trees is supposed to be nearly 4000 acres. The principal demand for forest trees in France is for lining the public roads; and they are, therefore, allowed to grow till they attain considerable size, without much trouble being taken in transplanting them, as in Holland. By far the greater number of the fruit trees grown here are exposed for sale in the streets of Paris; and the same may be said of the shrubs and roses, of which only the more common sorts are dealt in by the nurserymen of Vitry. M. Lacroix, of the firm of Vilmorin and Co., who accompanied us to Vitry, introduced us to M. Chatenay-Magnifique, *fils ainé.* This worthy man first showed us his wife and family, apparently as hard-working people as himself; and then his kitchen fireplace, the back iron plate of which exhibited the royal arms, and bore the date of 1659. M. Chatenay's grandfather, having been a gardener to one of the kings of France, became possessed of this plate; and during the Revolution of 1789, when every thing royal at Vitry and Choisy was destroyed, it was saved by being turned outside in.

M. Chatenay's Nursery Grounds are at least a mile from his house, in the village of Vitry. His stock is about as well grown as that of the English nurseries, but the order and keeping less neat. The *ver blanc* (grub of the cockchafer) has destroyed many of his stocks. Almond stones are planted in rows like beans in January, budded with peaches and nectarines in the following September, and are ready for sale by the end of October in the year after. Roses budded in June are ready for sale in October. Lilacs are raised from cuttings planted in November by thousands. Many of the forest trees 20 to 25 ft. high; and we were informed (what, indeed, we saw in many parts of the country by the road-sides) that, when removed to their final situations, they were headed down to 10 or 12 ft., and deprived of all their side shoots. However contrary this may be to the doctrine of Sir Henry Steuart, we believe, from observation and experience, that where the roots have not been previously prepared the French mode is the best, at least with most deciduous trees. If, in such a case, a tree could be planted with all its branches for one year, and pruned in the second year, that would, doubtless, be still better; but the objection lies in the expense of staking. The first year, the whole energies of a tree planted with all its branches would be directed to the formation of roots for the support of the head; these branches being removed in the beginning of the second year, the concentrated energies of the roots, in which the power of the tree chiefly resides, would be directed to the production of one main shoot and some subordinate ones. In the autumn of 1824, we planted, in our grass-plot at Bayswater, two plants of deciduous cypress, purchased from Lee's nursery: they were without balls, and each about 5 ft. high. One of them, in the course of the winter, was accidentally broken over within a foot of the surface; but the other remained uninjured, and was not divested of any of its shoots. The headed-down tree, next spring, made a vigorous shoot, which threw out side shoots; the other made only very short shoots. Both trees went on growing at the same relative rate for about four years; and they have been since, and are now, as near as possible, of the same size in every respect, and of the same vigour in their annual growths.

Choisy le Roi is also a village of nurserymen, but smaller than Vitry, and of much less note; indeed, as already observed, the number of growers, and quantity of acres mentioned as connected with the latter village, may be considered to include those of the former. At the back of the inn here is the forcing-ground of a kitchen-garden which belonged to a royal château destroyed in 1789. The walls are very massive, and covered by a broad stone coping. An old man at work told us that he remembered the time when the walls were covered with glass (*serres chaudes*), and the interior of the ground with pits. On some parts of the walls were the remains of old peach trees and vines. At the inn we got excellent mealy potatoes, of a purplish red variety, cooked *au naturel.* Mealy potatoes are not very common in France; but the reason is to be traced more to their want of good varieties than to the climate. We have sent specimens of some of the best British late sorts to the Abbé Gossier, for the Agricultural Society of Rouen.

Noisette's Nursery is one of the oldest about Paris. It appears to occupy between 6 and 8 acres; contains a tolerable collection of green-house and some hot-house plants under glass; a moderate collection of hardy trees and shrubs; and an extensive collection of roses, standards, and dwarfs. There are few herbaceous plants, with the exception of georginas. There are a stock of pine-apples, and a collection of about 20 sorts of table grapes, which M. Noisette informed us, in 1819, that he had obtained from England; besides about a dozen sorts of French and Dutch eating grapes. The hardy trees and shrubs in this nursery were formerly cultivated in masses according to the natural system; so, at least, Victoire Varangot, M. Noisette's foreman, informed us: but in 1815, and in 1819, when we were shown round the nursery by M. Noisette, the circumstance did not attract our attention. A specimen of each of the more rare of the hardy trees and shrubs is named by a tin label soldered to the top of an iron rod about 2 ft. long. The green-house and hot-house plants have their names printed on small plates of earthenware; each of which has a hole behind, in which may be inserted a stick to support it from the ground, or a wire to tie it to the plant. We regret that we had not leisure to examine this nursery in such a manner as to give a more accurate and ample account of it. Victoire Varangot we found a reading gardener, who understood the natural system; and we presented him with the Fifteenth Number of the Gardener's Magazine, and our best verbal advice for his future progress.

In Cels's Nursery peat earth plants are chiefly cultivated; and of these it contains, perhaps, the best collection in or around Paris. They are chiefly grown in pits, without flues, covered in winter with boards, mats, or reeds. In one of the peat borders we found *Anòna* parviflòra in fruit. There are a good collection of green-house plants, some hot-house plants, and a good many orange trees. We were sorry to see this nursery in very indifferent order.

Godefroy's Nursery at Ville d'Avray, near Sèvres, appeared to us one of the most prosperous and English-looking nurseries we ever saw on the Continent. The extent may be three or four acres; the surface is a uniform slope, laid out in parallelogram compartments with narrow alleys between; and the soil is a saponaceous yellow loam, not unlike that of some parts of the Hammersmith nursery. Most nursery articles are grown, hardy as well as hot-house; though the collection of the latter is, of course, the most limited. Magnolias are grown in abundance, and to great perfection. Magnòl*ia* macrophýlla ripens its seeds, and M. Godefroy has raised plants from them; as he has also from seeds ripened in his own garden of Magnòl*ia* tripétala, glaúca, and auriculàta; *F*àgus pùmila and americàna have also ripened seeds. We saw *Anòna* trìloba in fruit, and were told that Calycánthus *a*cerifòlius (?), *C*ratæ`gus (*M*éspilus) *s*orbifòlius (?) and Chamæméspilus, also ripened fruit or seeds. The bramble-leaved moss rose, the oak-leaved laburnum, the shell-leaved paper mulberry, the willow-leaved chestnut, and a number of other *lusus naturæ*, were pointed out to us; for the English, whether in trees, furniture, books, or other objects, are generally understood by the French to value only what is rare, curious, or difficult of attainment. This is too true; though, as we assured M. Godefroy, it did not happen to apply to us. It may, indeed, be considered as an attendant upon excessive riches, want of science, or the result of these and the aristocratic spirit of exclusiveness. The ties used for training plants in this nursery are the withered leaves of the Esparto rush (Lýgeum *S*pártum), which are sent from Spain in the packages of soda, and bought by M. Godefroy and other gardeners from the soapmakers. *A*mýgdalus geórgica, a species of *C*eanòthus, and two species of *V*ìtex (we regret our inability to be more particular) were pointed out to us as remarkably showy plants.

Sept. 16. — *The Garden of Fromont* is siuated 17 miles south of Paris, and combines an exotic nursery and an elegant villa residence. Its proprietor and cultivator, M. Soulangé Bodin, like M. Vilmorin, is at once a *marchand grenier* and an accomplished gentleman and scholar. We are proud to reckon both among the number of our friends, and most happy to have an opportunity of acknowledging the hospitality and kindness which we experienced from their families. In pits and peat beds at Fromont are propagated more rare trees and shrubs than, probably, in all the nurseries of Paris put together; and they are sold at prices so low, that even the trade in England and Germany is supplied from this garden with various articles of importance. Our admiration of the place and of the man, however, will bear an article by itself, which we will give in a future Number, as a connecting link between the Commercial and the Villa Gardens.

The Nursery of M. Audebert, in the Boulevard St. Jaques, is an old establishment on the point of being given up to be built upon; but it deserves to be mentioned as being the first nursery in France in which the camellia was propagated.

The Auteuil Nursery consists of about an acre, and contains a good collection of roses, and a few common shrubs and fruit trees.

Oct. 5.—*Vibert's Nursery, at St. Denis*, was commenced in 1828; M. Vibert having been driven from his former situation at Paris by the ravages of the *ver blanc*. The only article which he cultivates is the rose, of which he has several hundred varieties, a great many of which were raised by himself from seed. When he has procured a new and valuable sort, especially if it belongs to the Indian species (*Rósa* índica and semperflórens), he buds it on the current year's shoots of a stool of the *Rósa* revérsa (the original plant of this species, we were informed, was found by chance in M. Vilmorin's ground for proving seeds in Paris); lays these shoots down after the buds have begun to push; and the shoot proceeding from the bud, deriving nourishment from the roots emitted into the soil as well as from the stock, being thus greatly strengthened, pushes vigorously, so as to admit of layers being rooted and taken off the same season. This is quicker work than could be practised in England. We were rather surprised to be informed that dwarf roses on their own bottoms are considered to retain the character of the variety longer than such as are grafted. To prevent, as much as possible, the ravages of the *ver blanc*, the ground is covered with wheat straw, which hinders the insect from getting at the soil, and there burrowing and depositing its eggs. A hard smooth surface has the same effect, the insect being unable to burrow in it. The mole cricket is here rather troublesome; and M. Beck, M. Vibert's foreman, a German gardener, who has been in England, informed us that he had a plan for enticing the mole cricket, by an odoriferous composition, under a glass or pot, so that it might be taken and destroyed; and that his employer intended to put his plan to the test of experiment, and publish the result. M. Beck is an intelligent man; and we gave him No. III. of what is *to us* one of the best books in the world, viz. our Magazine of Natural History.

Sept. 29. — *Quentin's Nursery*, in the Rue des Bourguignons, is chiefly devoted to the culture and forcing of roses, flowers, and the more common green-house plants, for the *Marché aux Fleurs*, where Madame Quentin's stand is No. 32. The nursery occupies about an acre: when we saw it, it was admirably stocked, and as well cultivated, and as clean, as any piece of ground of the same extent we ever saw in any country. *J*asmìnum grandiflòrum, common myrtle, the orange, and the mignonette are extensively cultivated here; and the great object is to have plants in flower at all times in the year. Between 400 and 500 large orange trees are kept, chiefly on account of their blossoms, which are gathered for the perfumers.

M. Vilmorin and Co. have two nurseries or seed-gardens, one in Paris, and the other at M. Vilmorin's country residence, at a few miles' distance. Both are chiefly used for proving seeds. M. Vilmorin and Co., though unquestionably the first seedsmen in the world, are not nurserymen; that is, they do not grow for sale either plants or trees. We walked over the country garden with M. Lacroix, a young man scientifically educated, and skilled in several languages, who belonged to M. Vilmorin's establishment, and who accompanied us to most of the nurseries and market-gardens round Paris; and for whose most assiduous services in this, and in various other ways, we are much indebted both to himself and M. Vilmorin. Our attention was directed incidentally to the following articles: — great quantities of auriculas, grown entirely for their seeds; the Lima bean (*D*ólichos *lanàtus), with short broad pods, and very prolific; the violet-coloured carrots; young plants of varieties of the *P*ìnus sylvéstris, those called Pin de Riga, and the Pin de Hagenau, of which last, being reckoned the best, we sent home seeds, and the plants raised from some of them are now growing at Loudon's Howe, and Loudon's Brae, in Perthshire; dwarf Indian corn, *maïs de quarante jours*, *maïs à poulet*, and *maïs sucré*, perfectly ripe; bunches of grapes bagged in hair-cloth, and also in black wire-cloth (*toile métallique*); single specimens of most of the varieties of fruit trees known in the nurseries about Paris; a grass ground, in which

Lólium perénne var. itálicum, here considered the most valuable variety of the species, was conspicuous; many species and varieties of *Festùca*; of mangold wurzel; and of turnip, lettuce, &c.

This place, the name of which we unfortunately neglected to write down, consists of an old, but commodious and well preserved, château and park, laid out by Le Nôtre for Mademoiselle La Vallière, a mistress of Louis XIV. Near the house is a formidable sunk fence, which the French call *saut de loup.* In the shrubbery of the English part of the grounds, arranged and planted by M. Vilmorin, is a considerable number of rare trees and shrubs. In the kitchen-garden is a pit of pine-apple plants, which M. Vilmorin kindly and generously allows his gardener to grow for his own amusement. The gardener's house is close by the garden: M. Lacroix took us in to see it; and as all the doors were open, and the gardener and his wife from home, we took a note of the furniture, for the sake of comparing it with that of an English gardener under similar circumstances. The house consisted of two rooms on the ground floor, and garrets over, with some outbuildings for fuel, &c. We did not enter the garrets. In the living-room were the family bed, of the couch kind, and sufficiently wide for two persons; a child's bed, of the cradle kind; a large clothes press; two chests of drawers; a corner cupboard; a chest about 4 ft. long, 18 in. wide, and 18 in. deep, for kneading dough, and keeping bread after it was baked; a large fire-place, with an oven on one side and a furnace with two places for saucepans on the other; eight shining copper saucepans, three of them with lids; two brass saucepans; three frying-pans; one soup ladle; one ladle for lifting vegetables; one gridiron; one warming-pan; two salad bowls, and a number of minor articles. What struck us was, that the crockery was remarkably coarse, the spoons of silver, and the knives few and bad.* In the inner room was a larger child's bed, of the couch kind; a large closet, or store-room; one table, five chairs, a stove for warming the apartment, and some other articles, including a print of Bonaparte, and another of Marie Louise. There was a religious book or two, but no gardening books; neither master nor mistress being readers.

We have before designated M. Vilmorin and Co. as the first seedsmen in the world; and it is proper that we should state, for the benefit of our readers, the grounds on which we have formed this opinion. These are, first and chiefly, their extensive assortment of seeds, including all those calculated, not only for the colder, but the warmer and warmest climates of Europe; which cannot be said to the same extent of the assortment of any other European seedsman: secondly, the known probity, correctness, and intelligence of the firm, in consequence of the ample property of M. Vilmorin, and his education and acquirements as a scientific man and a classical scholar. M. Vilmorin has for some time been a candidate for a seat in the Institute, which is something even higher than being proposed as a Fellow of our Royal Society; because any man, if he has rank, may become a member of that Society, and yet be ignorant both of science and classical learning.

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* In farm-houses and cottages in the south of France, it is not uncommon to find a handsome silver fork laid for each person, while there is only one clumsy clasp knife, to be handed round for each in turn to make what use of it he may require. — J. W. L.

As a proof of the extensive assortment of M. Vilmorin and Co., and for the benefit of our readers in other climates, we give the following abstract of their printed catalogue as handed to us by M. Lacroix, with some MS. additions, in January 1829.

Culinary seeds (des graines potagères), 456 sorts.

Cereal grasses (plantes céréales), 65 sorts.

Forage grass plants, or hay plants from the true grasses (plantes fourrageuses tirées de la famille des graminées), 50 sorts.

Forage plants not true grasses (plantes fourragéuses non graminées, et racines-fourrages), 120 sorts.

Oil-bearing plants (plantes oléifères), 18 sorts.

Textile or thread-bearing plants (plantes textiles ou filamenteuses), 10 sorts.

Dyeing plants (plantes tinctoriales), 11 sorts.

Economical plants for different purposes (plantes économiques diverses), 7 sorts.

Seeds of hardy trees and shrubs (des graines d'arbres, et d'arbrisseaux de pleine terre), 300 sorts.

Seeds of shrubs and plants grown in the green-house or hot-house (des graines d'arbrisseaux et des plantes d'orangerie et de serre), 190 sorts.

Seeds of flowers and ornamental plants (des graines de fleurs et de plantes d'agrément), 294 sorts.

Seeds of ornamental fruits (des graines des fruits d'agrément), 23 sorts.

Seeds of flowers and plants of ornament, chiefly perennial (des graines de fleurs de plantes d'ornament, pour la plus grande parte vivaces), 202 sorts.

Seeds of hardy bulbous plants (des graines de plantes bulbeuses, &c.), 25 sorts.

The above are all seeds. M. Vilmorin and Co. have also a catalogue of bulbous roots, which, exclusively of named hyacinths, tulips, and other florists' flowers, exceeds 390 sorts. They have no catalogue of trees; but they procure these articles from other nurserymen, when ordered by their customers.

We have now slightly glanced at the principal Paris nurseries: the view we took of them was rather too hurried, and too late in the season; but our object, that of seeing something of every thing in the short space of six weeks, rendered this haste unavoidable. We have doubtless fallen into some mistakes: but if M. Vilmorin, M. Lacroix, or M. Soulange-Bodin will take the trouble to send us corrections or additions, they shall be inserted in our next Number, as a sequel to this article, and before we commence with the flower, forcing, and market gardens.

(*To be continued.*)

ART. II. *On Gardening as a Pursuit, and on the Language of Controversy in the Gardener's Magazine.* By CHARLES LAURENCE, Esq.

Sir,

THE Gardener's Magazine has been a source of much instruction and delight to me; it has abundantly increased my interest in my garden, and contributed materially to its embellishment. It has, by almost imperceptible degrees, allured me on, from one day to another, each unfolding new sources of gratification to the senses, until I have begun to flatter myself I shall one day be a gardener. I have ever deemed it wise in the young to cultivate those tastes which are capable of affording amusement and enjoyment in the decline of life, when the resources beyond the study become necessarily contracted; and, so far as my limited experience in gardening extends, that science and its fruits of various kinds appear to me especially calculated to afford delightful and varied recreation to the aged. I might add, that this healthful pursuit is a very probable means of attaining the age it is destined to amuse; and I am quite sure, that, considered merely as an amusement to the young, none can be more rational, more innocent, or produce a more salutary effect on the mind. But I am rambling from the immediate object of my letter, which is to tell you, that the instruction and pleasure I have derived from your Magazine have made me very solicitous about its character; and to tell some of your contributors, what I trust they will take in good part, that I hope they will cultivate their manners as well as their gardens. Several of your readers have been justly offended with the very coarse style of controversy too often indulged in. I have been on the point of noticing this before, but I was fearful you might deem me impertinent, until I noticed in your last Number (Vol. VI. p. 720.) your very candid introduction of the strictures of your correspondent on the "Principles and Conduct of the Conductor" (in the justice of some of which I must confess I concur), and the real good feeling of your note attached to them. In the last Number I am sorry to see, in one article, the following terms applied to an individual of whom I know nothing; but surely they are not calculated to throw any light upon the interesting subject of pruning: they are — "modern babblers," "impudence," "this immaculate author," "mark the matchless modesty of the man," "Oh, shame! where is thy blush?" "his drivelling ideas," &c. &c. All this, to say the least of it, is in bad taste, and out of place. Let us leave this personal vituperation to the mere politician and polemic; but pray let it be banished from the fair fields of science, and especially from our speculations on the management of the peaceful garden. I am, Sir, &c.

Charles Laurence.

Cirencester, Dec. 1830.

Art. III. *Remarks on the Country Seats in the Neighbourhood of St. Andrew's, Fifeshire.* By Mr. William Smith, Gardener to John Small, Esq.

Sir,

I am surprised that none of the writings of the gardeners of the county of Fife appear in your Magazine, considering how many excellent gardens and gardeners Fifeshire contains. Remarks on gardens are solicited by you from your correspondent Mr. Gale (Vol. V. p. 11.); and I am convinced that visiting gardens, public or private, is one great means of instruction. Since I last addressed you (Vol. IV. p. 91.), I have had an opportunity of seeing a great number, and consider myself much benefited by the inspection of them. As I am now settled in this quarter, and have seen a few of the neighbouring gardens lately, perhaps some account of them will not be uninteresting to you.

Lathallan, the seat of Major Lumsden, is situated in a valley extending east and west a considerable distance. Here is an admirable garden, of a quadrangular form, lately renewed, and in every respect what your correspondent Mr. Wilson (Vol. IV. p. 353.) would wish. The principal walks are 8 ft.

broad, with uncommonly neat box-edgings, and covered with sea gravel mixed with shells; on each side are proportionate flower borders, with alleys of 2 ft. between them and the vegetables. The wall trees are remarkably healthy, and are beautifully trained in the horizontal and fan manners. Here is a Calcutta pine-pit, the pines in which are very small, owing, in my opinion, to their being kept in too small pots (12 in. by 12 in.) to fruit in; and a melon-pit, forced by the steam of dung, confined underneath the bed. The back and front walls are arched, and the soil is supported by pieces of wood and wicker-work. The dung is well prepared and put under at the arches, and closely shut up to keep in the steam. The whole has a very clean, neat appearance. There are also two vine-houses, one on the old system of training all over the glass, the other on the pendent trellis system with peach trees on the back wall; the old plan is preferred. The Black Damascus grape, in general, is a bad setter of its fruit; here it is fecundated with the pollen of the Black Hamburgh, and sets freely. I have seen this garden three times during the season, and have not seen a single weed in it. As a whole, it is in the first-rate style of keeping and high order, and reflects great credit on the endeavours of Mr. Young, the gardener.

Largo House, the seat of General Dirom, beautifully situated on the banks of the Forth, commanding a fine view of that river. This garden is extensive, and well stocked with fruit trees of all descriptions. What attracted my attention most was the system of training apple trees on the walk borders downwards on conical trellises, which has a very neat appearance, and is preferable [?] to the straight espalier method, or to dwarf standards, especially when let out of bounds. Those making new gardens would do well to adopt this plan of training. [?] There are a small pine stove at present filled with stove plants, a circular vine-house, a peach-house, an orangery just forming, and a fine green-house attached to the mansion house, with very extensive pleasure-grounds, all kept in first-rate order by Mr. Steuart.

Cunnoquhie, the seat of Col. Paterson, is pleasantly situated on an eminence rising gently from the plain beneath, and has an extensive view of the surrounding country. The garden and pleasure-grounds are greatly improved of late. Here is one of the far-famed steam chamber pine-pits. Pine-apples and melons have been grown in it to great perfection; and, as a proof of its superiority, the gardener has gained many prizes for both fruits at different horticultural societies. There is a portion of this pit planted with pines in a bed of prepared *soil merely to* fruit in, which are clean and healthy, have a strong gigantic appearance, and are superior to any I have ever seen in Scotland; melons succeed best in it in dry seasons. There are also two new vine-houses on the pendent trellis system, with peach trees on sloping trellises below. The same fault is here attributed to this system of exposing vines to the sun (*as it is only half exposing them*), as at other places, namely, that the fruit on the lower vines is much inferior. This gentleman takes great delight in his garden, and has spared no expense to render these new inventions as complete as possible. Every thing else in this garden bears the stamp of superior management, and reflects great credit on Mr. Smith, the gardener.

Fernie Castle, the seat of Francis Balfour, Esq., is situated on a plain, and has a fine view of the country before it. There is nothing very remarkable in this garden. The wall is the chief thing that attracts attention, being built of prepared stones of a reddish colour, in courses, as with brick, and is the best garden wall I ever saw. There are four forcing-houses begun but not yet finished, a flued wall with plenty of training, a good collection of shrubs, and some fine specimens of the Scotch pine; the whole kept below the economic point by Mr. Keir.

I am preparing a plan of my present situation, and, if agreeable, will send it. [We shall be most happy to receive it, and as many accounts of other gardens as possible. — *Cond.*]

I remain, Sir, &c. WILLIAM SMITH.

Priory, St. Andrew's, Fifeshire, Oct. 27. 1830.

ART. IV. *Description of Garbally Park and Mansion, the Residence of the Earl of Clancarty.* By Mr. ANDREW JOHNSTON, Gardener there.

Sir,

IN some of your late publications you expressed a wish to be furnished with general information relative to the principal residences of the nobility and gentry, or, at least, of such as have not been noticed in any of your former Numbers. From what I have seen of Ireland, I am satisfied there are many places well worthy of notice in your works and in others devoted to rural affairs, which have been either wholly overlooked or misrepresented.

It is to be regretted that your valuable and interesting correspondent Mr. Fraser, whose opportunities of collecting such information are so extensive, has not lately favoured your readers with any communication regarding the many places that come almost daily under his observation. In common, we on this side the Channel have been much too tardy in coming forward, to endeavour, at least, to add something to the many valuable communications in your miscellany, though there are few noblemen's or gentlemen's seats in either of the sister kingdoms that are not equalled in this, both in extent and in beauty of landscape.

Garbally Park, the residence of the Earl of Clancarty, the garden and woods of which I have the honour to superintend, is perhaps more generally known than any other demesne in Ireland; the great annual fair of Ballinasloe being held in it. The demesne is extensive, containing 658 Irish acres; the soil is in general shallow, the subsoil in most places a loose limestone gravel. It is situated on the eastern boundary of the county of Galway, within a short distance of the neat and thriving town of Ballinasloe, and is one of the very few hilly tracts the traveller passes over from the Bay of Dublin to that of Galway. It is interesting, as possessing within itself in a high degree all the constituents of landscape. It is particularly well planted, and presents a beautifully undulated surface; and though there are no very remarkable trees, individually considered, yet they and the woods, taken in the aggregate, are well worth the attention of the arboriculturist, particularly an extensive oak wood, which in beauty of outline is scarcely surpassed. There are some fine specimens of wych elm here, which in my opinion is decidedly superior to the narrow-leaved variety (*U'lmus* parvifòlia of the Dublin botanic gardens) too generally planted in this country. Its outline is much more picturesque, its timber is more valuable, and it is besides much better calculated to withstand the harsh winds which assail us from the Western Ocean. There are likewise some masses of *A'*bies álba, sold by the nurserymen in parts of this country as the *A.* nìgra. It is planted on very elevated situations, and appears to withstand the severe winds much better than any other of the spruce family, as it has been remarked by your correspondent Mr. Fraser (Vol. IV. p. 216.), who saw it on a neighbouring hill, Ballydugan, the seat of W. M. Burke, Esq.

It may not be uninteresting to the planter to know the kind of trees that thrive best on our reclaimed bogs. We find the Scotch fir to be one of the best, together with the birch, the alder, and some few poplars, the Canadian for one. It is almost unnecessary to say the timber grown in such situations is much inferior to that upon the upland. I have found laurel to do extremely well as underwood: two years ago I laid some large branches in the bog, spreading out their various side shoots, and covering them about 6 in. deep: they are now growing freely; and in all moist places the laurel treated in this way will thrive well. It is, therefore, quite unnecessary to introduce rooted plants.

The garden and nursery here contain about seven acres; the latter has been lately formed for the purpose of supplying His Lordship's tenantry with forest trees.

Garbally Mansion (*fig.* 3.) is nearly a square; the exterior quadrangle is 141 ft. by 131 ft., the interior 55 ft. 6 in. by by 48 ft. 5 in. It is situated on a gentle eminence, commanding an extensive view of the park and adjoining country. The grounds have been formally, though agreeably, sloped to correspond with the style of the house. It is surrounded by a terrace walk, whence you descend, by a slight declivity, to a spacious walk, one quarter of an English mile in length, on each side of which is a line of venerable yew trees. This and its accompaniments are, perhaps, equal to any thing of the kind in Britain. To any one desirous of having an effectual, and at the same time an unobtrusive, barrier for deer, or other purposes, I may be permitted to suggest the adoption of our sunk fence, as figured in Vol. IV. p. 334. by Mr. Fraser, who in that paper remarks that a colour for the walls would in some instances be an improvement. I have adopted a very simple plan, that will in a few years effect this desirable object, namely, planting ivy along the walls.

3

If you conceive these remarks worthy a place in your Magazine, I shall be happy to give you occasionally, as my time permits, an account of any thing remarkable in several extensive demesnes in this neighbourhood.

I am, Sir, &c.

Andrew Johnston.

Garbally, Ballinasloe, Dec. 1830.

Art. V. *Description of a Ladder for the Purposes of gathering Fruit, pruning or training Trees, &c.* By Mr. Matthias Saul.

Sir,

I send you an account and a sketch of a machine (*fig.* 4.), which will be serviceable to gardeners for a variety of purposes, such as gathering fruit from trees, and also for pruning and training. It stands free of the tree, in which quality it has a great advantage over the common ladder; and it is easily moved to reach any part of the tree.

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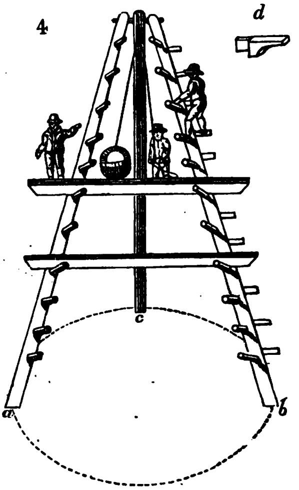

The length of the three uprights may be as circumstances require, so as to suit the walls and fruit trees of any particular garden. There are two movable boards about 12 in. broad, supported either by iron or by oak pins, so that they can be moved to any height. If the pins are of oak, they are made like brackets (*d*); if of iron, they are made of $\frac{5}{8}$-round rod iron. One of the uprights is furnished with pins, both along its front and edge, as seen in the sketch; so that a person may ascend with as much ease as up a ladder.

By this plan, two or three persons may be at work at the same time.

The upright *c* must be longest, for it then will set *a* and *b* more erect, which will be an advantage in training wall trees. A pulley may be fixed in the upright *c*, so that the fruit basket, &c., may be let down by a rope, when employed in taking fruit from large standards. The three uprights are secured by an iron bolt, which passes through them at their top end; and the uprights moving on this bolt can at pleasure be opened into a triangle, which makes the machine perfectly steady, and easily to be moved: by closing the uprights it is conveniently stowed in the shed, and occupies but little room. I am, Sir, &c.

MATTHIAS SAUL.

Pomological Garden, near Lancaster, Sept. 18. 1830.

WE have not the George the Fourth polyanthus, and shall feel obliged to Mr. Saul for the plant of it which he offers. — *Cond.*

ART. VI. *Remarks on pruning Forest Trees, in reply to Mr. Elles and others.* By Mr. JOHN HOWDEN.

Sir,

I HAVE this moment read the letter of Mr. Elles; I trust he has not extinguished my farthing rush-light, but only snuffed it, to make it burn the brighter. It is certainly the duty of Mr. Elles, of myself, and of every practical man in the line, to assist in making the Gardener's Magazine "a burning and a shining light." I perfectly agree with Mr. Elles respecting the physiology of plants; but the propagation of strawberries, or the striking of pink pipings, has nothing to do with timber trees. All depends on what is ultimately wanted: if I wanted leaves from off the tea tree, I should be sorry to cut off the branches; or if I wanted fruit from the currant bush, I should be sorry to to permit its twigs to remain; and if I wanted fine clean timber, I should be sorry to see the trunk of the tree all over branches or knots. A certain quantity of branches, twigs, or leaves, is necessary for the growth of timber; but too many are as bad as a man having a larger family than he can maintain. It is true that some kinds of trees will not bear pruning so well as others, just as there are some mothers who would fret themselves to death for the loss of their offspring; whilst there are others who would do better without them, for instance, the cow without her calf.

But I am wandering from my subject, and, as Mr. Elles will say, or Sir John Falstaff would say, I make such "unsavoury similes." Oh! by the by, Agronome is very proud to think his name had a charm in it for Mr. Elles; while John Howden is no less sorry to think his name is so disgusting to him. Another gentleman has told me the same thing; but I tell them both that, however humble my name may be, as Shakspeare says, "I'll make it greater ere I part with it." I have given it to the public in proof that I am no impostor, but a man in full practice. I should like to ask those who disapprove of pruning trees, particularly the pine and fir tribes, what can be their reasons? Should they say the extra trouble and expense, I answer that all trees must be pruned before they are brought to the sawyers: and which is easier, to prune off small twigs, or large limbs? When a fir tree is once pruned, it never wants pruning afterward at the same place: and which does the carpenter prefer finding; a small twig, not so thick as a straw, in the heart of his balk; or a large knot, as thick as his arm, at or near the outside of it? When a bough is cut off from a tree in its green state, though as thick as my thumb, by the time the tree begins to heart the knot will be squeezed to a less substance than the grey goose-quill with which I am writing this letter; whereas, if allowed to remain growing, it would not only grow thicker, but even form a heart of hard wood which no squeezing could diminish. When trees are pruned young, they may stand thicker on the ground before injuring each other, or injuring themselves. Trees planted 4 ft. apart may, if properly pruned, stand till they are 9 ft. rails: every other row should then be taken out, and the year following every second row, crosswise. In a few years more they may be further thinned in the same way, leaving the trees 16 ft. apart.

Strong oaks, and other hard-wooded trees, 6 or 8 ft. high, should now be brought from the nursery, and planted in the centre of each square space: these should be treated as carefully as if they were fruit trees; and if the soil is not good, a barrow-load of good soil should be brought to each of them. Every person who has forest-planting to do should have a nursery of his own, on as good land and as near the intended plantation as possible. The oaks, &c., should be twice transplanted: at two years old they should be removed from the seed bed, and planted in rows 1 ft. apart, and 4 in. in the row; and at the end of four years they should be again removed and planted in rows 4 ft. apart, and 1 ft. in the row. Here they should stand four years longer, when they will each remove with a ball of earth to them: for, observe, an oak is but a young tree or plant at ten years old, and though the larch fir and Scotch pine overshadow them, they will grow, not the worse, but the better, for it for a few years; when the Scotch may be all cleared out, and the larches pruned a little higher. I would recommend chiefly for hard wood, in rows, an oak, an ash, a Spanish chestnut, an elm, an oak, &c., following one another; as the ash and elm are excellent underwood, or will become good timber trees where the oak or *Spanish chestnut may* not succeed. As old Philip Miller says, I leave the world to judge what a fine property the owner of such a plantation will leave to his son and to the nation.

I have nothing more to say on forest-planting, so conclude with the old saying, "Let works bear witness."

Yours, *en vérité*,

Heath House, Oct. 10. 1830. JOHN HOWDEN.

ART. VII. *Description and Use of a Machine for transplanting large Trees and Shrubs.* Invented and communicated by WILLIAM THOM, Esq. Surgeon, Annan; and used in his Garden there.

Sir,

THE method adopted by Mr. Hay to remove the citron tree at Castle Semple (Vol. VI. p. 702.), recalls to my recollection an intention that I entertained some time ago, of making public an account of an apparatus that I have now had some years in use. Its object is effectually to accomplish the great desideratum of forming and securing a ball of earth round the roots of a growing tree or shrub intended for transplantation, in order that the operation may be performed with invariable success, and without causing any material check to the health, growth, or fertility of the subject.

This apparatus, though simple in construction, and easy of application, when seen and understood, is not readily described without a model, therefore circumlocution and repetition will be unavoidable; so that while I convey useful instructions to the practical gardener, I expect also to afford amusement to the verbal critic. Let it be kept in view, that it is simply my intention to describe a method of "weaving a basket or hamper of iron round the roots of a growing tree, without disturbing or deranging the earth or mould in which the roots are pasturing."

The first part of the apparatus (a cover for the basket) consists of two flat semicircular pieces of sheet iron (*fig.* 5, *a*, *b*), but exceeding the limits of a semicircle so far as to admit of about 3 in. of overlap to form the union, when the circle is completed by their junction. Near its outer margin

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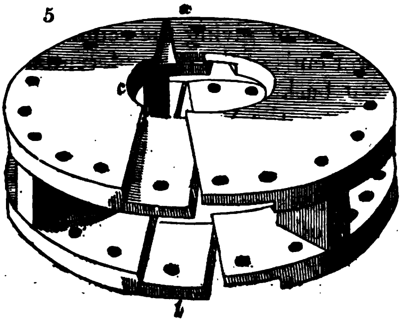
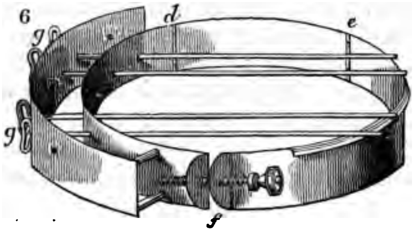


this circle of plate iron is pierced round the circumference, with a circle of holes, at the distance of about 2 in. from hole to hole, each hole being about three quarters of an inch in diameter, to receive iron rods hereafter to be mentioned. The area included in this circle of holes determines the size of the ball of earth to be preserved, while a circular opening in the common centre of each of the semicircles forms a hole for the reception of the stem of the shrub or tree. The surface being pared level till the fibres of the root begin to appear, let the two semicircular pieces of iron plate be so placed horizontally as to embrace the tree (*c*).

Let the holes in the circumference of the circle, beginning with the overlaps, be now penetrated with iron rods perpendicularly downwards to the depth of about 2 ft., or a little deeper than the roots are expected to extend. It is evident that you have now a ball of earth of the width of your circle, and depth of your rods nearly insulated: in other words, that the cover and sides of your hamper are formed; a bottom only being wanted, and something to give stability and firmness to the work. To give stability, dig and clear away freely, so as to gain ample room to work the earth from the exterior of your circle of rods, till you are below the general mass of the roots; but do not yet go quite so deep as to free the lower ends of your rods. Let these rods, near their lower ends, be now included in an iron hoop (*fig.* 6.) of nearly the same diameter as the circle of holes in the horizontal plates; which hoop, for convenience of application, opens in one or more places by hinges (*d*, *e*), and, for strength and firmness, closes by a strong screw spindle working in jaws (*f*): the said spindle or male screw being of considerable length, to admit of giving the requisite pressure and support on the lower ends of the circumferential rods which form the sides of your basket.



The bottom, which completes the insulation, is formed by passing horizontally from side to side, below the general mass of the roots, iron rods (*g*), at about 2 in. distant; and for security and regularity these rods are passed through holes previously made in one side of the hoop, and their points brought out just above the hoop at the opposite side.

The problem is now solved; the basket is woven; the ball formed, and capable of sustaining much rough usage; but the tree remains to be removed from the hole.

Pass under the hoop two strong iron rods or levers, parallel to each other, and of length sufficient to allow of their projecting at each end 12 or 14 in. beyond the ball, so that two or more men may have ample room to lay hold of them, and bear the tree and ball as on a barrow to its destined habitation, or to a cart or other conveyance.

The roots that penetrate deeper than the bottom of the ball must necessarily be cut, but such as project laterally may easily be preserved.

When planting the tree, do not remove any part of the apparatus prematurely. The screw of the hoop can still be loosened, and the bottom rods withdrawn, after some earth has been put into the pit; and on no account disturb any of the perpendicular rods till the planting is entirely finished. I have sustained injury from officious assistants showing their activity at this period of the operation.

To preserve continuity and simplicity of description, some essential items have hitherto been omitted.

1. It is nearly impossible for even an expert workman to thrust the iron rods perpendicularly down without some guide; and, unless they are accurately placed, the hoop cannot be applied at the bottom so as to preserve the ball entire. A guide therefore becomes necessary, and the best is to have each semicircle composed of two parallel plates, 5 or 6 in. distant, one above the other, firmly joined by intermediate pillars or supports; the holes accurately corresponding, so that any pin or rod passing through both plates, must necessarily be at right angles to their plane. (*fig.* 5.) The support thus afforded to the upper ends of the rods by the double plates enables them to bear the pressure of the screwed hoop without injuriously bearing upon the included ball of earth. From this reasoning will also appear the necessity of having the iron plates of sufficient strength or thickness, so as not readily to bend or yield to slight pressure.

2. It has already been mentioned that the hoop, which retains the lower ends of the perpendicular rods, is pierced with holes to receive the horizontal rods, which form the bottom of the basket. It remains now to be added that the part of the hoop in which such holes are situated should be double, like the horizontal plate used on the surface, having corresponding holes in such parallel appendage, so as to guide the rods in the proper direction, in order that their points may come out just above the opposite side of the hoop. (See *fig.* 6.)

Any embarrassment which may occur in using the machine will be in passing the bottom or horizontal rods; workmen can scarcely be induced, till experience has taught them, to make sufficient room with the spade to admit of depressing sufficiently the head end of the rods, so as to bring the points out above the hoop; and yet an error in this respect may cause a total failure.

3. Nothing has been said of the size of the machine, as in this respect every one may consult his fancy. It should, however bear some proportion to the extent of the roots of the subject. I have never used or made more than one such apparatus; it includes a ball of 22 in. in diameter; with it I have during the last three years removed about a hundred trees and shrubs, and in no instance has any material check been given to vegetation. Shrubs usually reckoned shy have continued to thrive and blossom; and apples, pears, and plums, to bear and perfect their fruit the first season. In several instances these were transported on carts and buggies, over paved streets and uneven roads, and always without injury, when the apparatus was tolerably worked.

There is one objection to the general application of this apparatus, which is the space it requires to be worked in; namely, an opening on one side, at least equal to the diameter of the ball to be preserved, and the breadth of a spade round the remainder: but as the machine is only intended for valuable shrubs and trees, it will be generally applicable, even in close plantations, by sacrificing plants of less note.

In extenuation of the redundancy of directions given, I may remark, that I once lent the apparatus to a gardener, with the most explicit instructions as to its use; but such was the force of habit in this worthy brother, that he persisted in forming the ball with a spade before he applied any part of the apparatus, and ultimately made the discovery that the machine would not suit his previously formed ball, and that it was consequently useless!

Lest the profession should still commit another such blunder, let me again repeat, that, except paring the surface level till the roots begin to appear, the soil must on no account be disturbed till all the perpendicular rods are inserted to their full extent; nor must their points be deprived of their hold in the earth till secured in the hoop, and that made fast by the screw. Inattention to these circumstances will inevitably cause a failure, and the apparatus will be condemned to bear the obloquy legitimately pertaining to the operator.

I am, Sir, &c.

WILLIAM THOM.

Annan, Christmas, 1830.

The two models of the very ingenious machine received with the above communication have been sent to Weir's Agricultural and Horticultural Implement Manufactory, Oxford Street, who will execute working implements from them of any size. — *Cond.*

Art. VIII. *Plan for a Flower-Garden calculated for a full Display from March to November, with a List of Plants for one of the Beds, in order to show the Mode of preparing the Lists for the others.* By C. D.

The garden is placed in a recess of the shrubbery or lawn, and the exterior bed is surrounded by turf, no part of which is narrower than 5 ft.; beyond which is a border of low American shrubs.

The central mass, 10 ft. in diameter (*fig.* 7. *a*), contains a collection of China roses, including semperflòrens, sanguínea, and all the varieties of *Noisettiana*; the interstices to be

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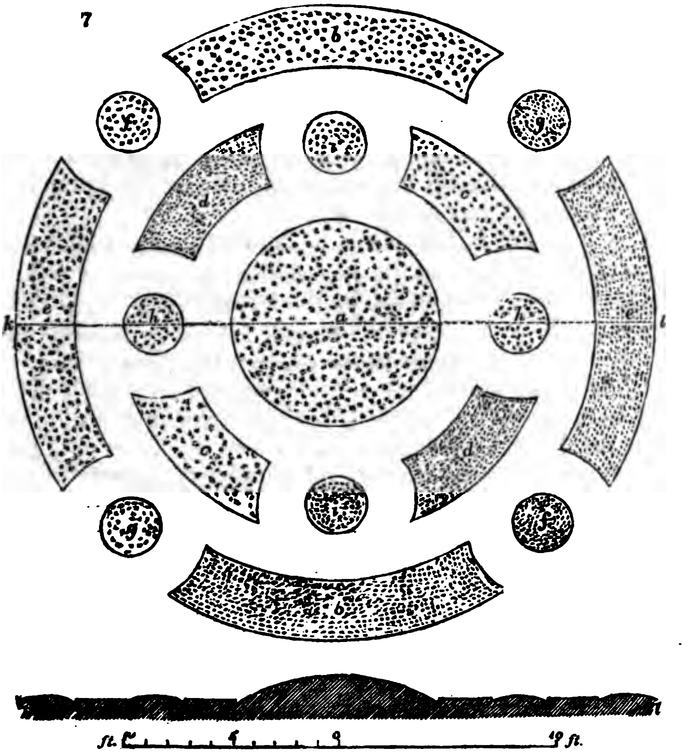

planted with a mixed collection of bulbs. There may be a standard purple Noisette rose in the centre; and the marginal line should be of mixed hyacinths.

The other beds are proposed to be planted with herbaceous plants, bulbs, and showy green-house plants, in the following manner: —

b, Red-flowering herbaceous plants and red-flowering bulbs; the border of Aimable Rosette hyacinths.

c, White-flowering herbaceous plants and white-flowering bulbs; the border of white crocuses.

d, Blue-flowering herbaceous plants and blue-flowering bulbs, bordered by blue or purple crocuses.

e, Yellow-flowering herbaceous plants and yellow-flowering bulbs, bordered with yellow crocuses.

f, Variegated horse-shoe geraniums, alternating with mixed hyacinths, and bordered with mixed crocuses.

g, Variegated ivy-leaved geraniums, alternating with mixed tulips, and bordered with mixed crocuses.

h, Fúchs*ia* coccínea, or any favourite tender annual or green-house plant, alternating with mixed *N*arcíssi, and bordered with mixed dog-tooth violets.

i, Heliotropes, or other favourite tender annual or green-house plants, alternating with mixed *I'*ris *X*íphium, and bordered with mixed *S*cílla vérna and bifòlia; the latter in its blue, white, and red varieties.

The beds are raised a little in the centre, as is shown by the section *k l*.

The details of one bed (*fig.* 8.) are given, as a specimen of the manner in which the beds are proposed to be planted with herbaceous plants, alternating with bulbs, and bordered with bulbs.

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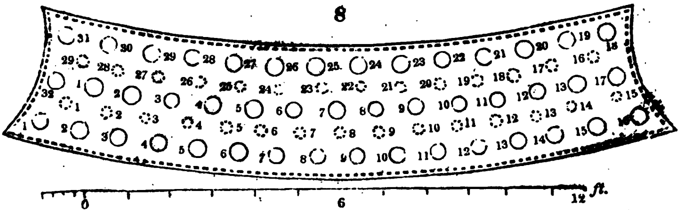

Herbaceous plants with red flowers; equal numbers flowering in April, May, June, July, August, and September, till destroyed by frost.

Outside Row; height of the plants from 6 in. to 18 in.

1. *P*hlòx subulàta; April.
2. *L*ýchnis Viscària and flòre plèno; May.
3. *Antirrhìnum mèdium*; June.
4. *Phlóx glabérrima; July.*
5. *P*entstèmon angustifòlius; August.
6. *A'*ster salicifòlius; September and October.
7. Prímula Alliònii; April.

8. Aquilègia canadénsis; May.
9. *Betónica* grandiflòra; June.
10. Chelòne barbàta; July.
11. Epilòbium angustíssimum; August.
12. Lobèl*ia* fúlgens; September and October.
13. Cortùs*a* Matthìoli; April.
14. Pentstèmon Richardsòn*i*; May.
15. Diánthus caucásicus; June.
16. Physostègia speciòsa; July.
17. *M*álva moschàta; August.
18. *A'*ster vimíneus; September and October.
19. *P*hlóx setàcea; April.
20. *P*hlòx pilòsa; May.
21. *G*erànium Wallich*iànum*; June.
22. *P*hlóx amœ̀na; July.
23. *S*tátice oleifòlia; August.
24. Epilòbium latifòlium; September and October.
25. Hepática tríloba (red, single, and double); February and March.
26. *L*ýchnis coronàta; May.
27. *P*hlóx subulàta; June.
28. *Verónica* cárnea *Donn's Hort. Cant.*, July.
29. *G*enti*àna* incarnàta; September and October.
30. *V*ìola Krockèr*i*; February and March.
31. Pulmonària officinàlis; May.

Middle Row; height from 18 in. to 2 ft. 6 in.

1. Aspérula taurìna; April.
2. *G*erànium *a*nemonefòlium; May.
3. *C*alamíntha grandiflòra; June.
4. *L*áthyrus grandiflòrus; July.
5. *P*hlóx undulàta; August.
6. Stèv*ia* purpùrea; October.
7. Dodecàtheon Meád*ia*; April.
8. *Valeriàna* rùbra; May.
9. *D*ictámnus rùber; June.
10. Chelòne barbàta; July.
11. *H*ibíscus *r*òseus; August.
12. Lobèl*ia Tùpa*; September and October.
13. *P*apàver bracteàtum; June.

Bulbs for the intermediate Rows.

1. Trichonèma Bulbocòdium; March.
2. Claytòn*ia* caroliniàna; April.
3. Tríllium erythrocárpum; May.
4. *L*ílium chalcedónicum; June.
5. *A'*llium rubéllum; July.
6. *C*ólchicum autumnàle; August and September.
7. *C*ýclamen còum; March.
8. *A'*llium amœ̀num; April.
9. *L*ílium cóncolor; May.
10. *G*ladìolus byzantìnus; June.
11. *Tùlipa* montàna; July.
12. *A'*llium globòsum; August and September.
13. *S*cílla bifòlia var. rùbra; March.
14. *A'*llium incarnàtum; April.
15. Arethùs*a* bulbòsa; May.
16. *L*ílium *Pompònium*; June.
17. *G*ladìolus cardinàlis; July.
18. *A'*llium serótinum; August and September.
19. *S*cílla non scrípta fl. rùbro; March.
20. Fritillària latifòlia; April.
21. *L*ílium aurantìacum; May.
22. *A'*llium Pallàs*ii*; June.
23. Zephyránthes *r*òsea; July.
24. *C*ólchicum arenàrium; August and September.
25. *L*ílium andìnum; July.
26. Fritillària melèagris; June.
27. *A'*llium pulchéllum; July.

Row round the Margin.

*H*yacínthu*s* orientàlis var. Aimable Rosette.

C. D.

Shepperton, on the Thames, March, 1830.

ART. IX. *On the Treatment of Brugmánsia suavèolens.* By E. S. With a Note on the same by J. D.

Sir,

HAVING succeeded in bringing the Brugmánsia suavèolens (*Datùra* arbòrea of Donn's *Hort. Cant.*) to a very large size, and in blooming it, I take the liberty of sending you an account of my method of treating it, as I have seen others planted without producing a single flower. I was first induced to turn them out from reading your Magazine; but finding it difficult to keep the plants afterwards so as to attain a large size, on which its beauty very much depends, I was anxious to adopt some method to surmount the difficulty. Being in possession of a plant about three years old when I read of planting out, I, according to the directions given, placed it in the open ground to flower, and found it to fully answer my expectation; but, in taking it up again, I was sorry to see many of the shoots (which had become very succulent) die away in the winter. I therefore planted it the next time in a pot about 15 in. in diameter; having first knocked out the bottom, and laid a few sticks across to keep the mould in the pot. I then placed it in a border of a house then at work (inside), with about 3 in. of the pot underground, giving at all times plenty of water, and frequently smoking to destroy the fly; by this means it flowered well in the house; and when the open air was sufficiently warm, I took it up and planted it in the open ground, quite burying the pot, and shading it till it began to grow. It then began to show flowers, and continued in flower all the summer, without producing such rampant shoots as when planted out of the pot. I then took it up, and placed it in a large pan, giving at all times plenty of water, till the time of planting it again in the border of the house. The greatest number of flowers in full bloom at one time was eighteen. If you think these remarks worth your notice, perhaps some of your readers who may have had more experience with the Brugmánsia will be kind enough to give further information, while others may profit by this. Hoping you will excuse this humble attempt, I remain, with wishing prosperity to your valuable work,

September 21. 1821. E. S.

P. S. — I have been trying the same means with other species of plants, and may perhaps, at some other time, send you accounts of my success, should you feel a wish to see them. — E. S.

We shall be most happy to receive these accounts, and congratulate our correspondent on having succeeded in gratifying his sight and scent with the odour and splendour of the exquisite blossoms of the Brugmáns*ia*. We once saw a fine large, spreading-headed specimen of this shrub, exhibiting even a greater number of flowers than our correspondent's plant produced. It was night, and the fragrance of the blossoms pervaded the conservatory; while the delicate whiteness of its large pendulous bells, contrasted with its ample green foliage, and as viewed in the imperfect illumination of candlelight, made it a grand and exhilarating spectacle, one that to us seemed Orientally luxurious. This was at Bury St. Edmund's, in the conservatory of John F. Leathes, Esq.; and the enthusiastic Mr. Dean Walker, who was then delivering lectures on astronomy in the town, was one of our party, and so affected was he with the sight, that throwing himself into a spacious arm-chair, which, with judicious taste, had been placed beneath the branches of the plant, he exclaimed, in the words of Virgil, —

> "Tityre! tu patulæ recubans sub tegmine" plantæ.

This splendid specimen was under the care of the gardener Mr. Goodchild, who loved plants for their own beauty and interestingness; and as the Brugmáns*ia* had doubtless been for many years part of the furniture of the conservatory, it probably owed this prodigious effort of blossoming to its having been long confined in the very pot in which we saw it, and to its having had its demands for water most constantly, yet moderately and judiciously, supplied.

We have recently heard that the Brugmáns*ia* has been made to blossom during the past summer, most successfully, by the lady of T. Bridgman, Esq., of Weston, Suffolk; a lady who is, moreover, sedulously attentive to the cultivation of the splendid species of the nat. ord. Amaryllí*deæ*, and who blooms them in greater vigour, splendour, and profusion than any one besides in that county. We should feel much obliged would this lady communicate the mode adopted by her to bloom the Brugmáns*ia* so successfully; and we have no doubt that this lady could furnish, besides, many a useful and original hint on the culture of the Amaryllí*deæ*, the result of her own numerous experiments and great experience. We most respectfully solicit the favour of her remarks.

J. D.

ART. X. *On the Propagation and Culture of the Georgina.* By Mr. JAMES NASH, Flower-Gardener to Lord Farnborough, at Bromley Hill.

Sir,

GEORGINAS may be very successfully and expeditiously increased by cuttings, by placing the roots about the middle of February, without potting, in a hot-bed frame, or in any forcing department containing a moist atmosphere; and, as soon as the shoots have produced a pair of perfect leaves, taking them off just below a joint, observing to leave an eye on the stump if you wish the old root to push again. Pot them singly in light rich loam in small sixties, place them in a hot-bed frame, giving very little if any water, and protect them from the sun till they are perfectly established, which will be in about a fortnight. They may now be removed to the green-house, and they will become fine strong single-stemmed plants by the time for planting out, which will be when the nights are free from frost. Plant them at a distance of 3 or 4 ft. each way; and if they be inclined to branch out at the bottom, take all off except one, and keep it free from shoots for the first foot, which will cause the plants to grow more stocky, and to produce much finer flowers than those on which a profusion of shoots are suffered to grow.

Georginas may also be propagated by root-grafting, in the same manner as directed for the *Pæònia Moùtan* (Vol. III. p. 293.), which will be found very advantageous for very choice sorts, or weak cuttings, as those raised by grafts will be fit for planting in half the time required for cuttings. For practising grafting the georgina, dry roots of inferior sorts should be reserved in a dormant state for stocks; and, when cuttings of the desired sorts are in readiness, take single tubers from them, which slit from the top 2 in. downwards on one side about halfway through; give the scion a wedge shape, and insert it into the incision of the tuber, binding it well up with good bast. Pot them in as small-sized pots as convenient, and proceed as for cuttings.

I am, Sir, &c.

Bromley Hill, Kent, Aug. 26. 1829. JAS. NASH.

ART. XI. *On the Normandy Cress.* By Mr. CHARLES M'INTOSH, C.M.H.S., Author of the *Practical Horticulturist, Flora and Pomona, &c.*

Sir,

THE Normandy curled cress which you admired when *here, and which you* were pleased to notice (Vol. VI. p. 382.), I now send you a few seeds of, both for your own use, and also, if you think proper, to distribute to any of your friends. It is now rather late in the season to sow it for winter use, which is its greatest merit. A little of it may, however, be now sown very thin, which, if the winter prove mild, will come into use in February, March, and April. My season of sowing it is in September and October for winter and spring supply; and in March, April, and May for summer use. Indeed I sow no other sort of cress, and have from four sowings had a constant supply, besides seeds, for nearly two years; and our demand for salads is not small. To procure mustard to mix with it, I sow once or twice a week during the year; and such is the usual practice when the common cress only is grown. No season since I began to cultivate it (which is now fifteen years) has ever been so severe as to destroy it, or even to prevent its being gathered for a day. When it is frozen in winter we put it into a tub of cold water, which in a few minutes thaws it sufficiently. In cold situations it may be sown at the bottom of the wall; but this precaution is seldom necessary. It is not only a valuable salad herb, considered merely as such, but makes a much neater garnish, particularly for small dishes, than the finest curled parsley, and may be eaten by those to whom the taste of parsley is disagreeable. Specimens of both I send for your opinion. In gathering it we only pick off the outer leaves, and those are preserved as entire as possible. Bruising the leaves destroys the beauty; and by cutting the crop over with a knife the central or heart-leaves are liable to be injured. I beg also to inform you that I have given a supply of the seed to my old friend Mr. M'Arthur, who informs me he has commenced nurseryman at the Polygon, Edgeware Road, and whose success as a commercial gardener I hope may be equal to what it was while he was a serving one. I have suggested to him to grow this cress extensively, as I conceive it only requires to be once known to supersede the use of water-cresses, which are much more difficult to cultivate, and, unless great care be taken in washing them, are supposed to be often accompanied by the larvæ of insects. Wherein the medical properties of the one differs from the other I know not: but this I know, that I prefer the curled cress for a vegetable ingredient to breakfast before the other, as more palatable, setting aside the chance of being poisoned with water parsnep, or any other of the poisonous Umbellíferæ; or having my stomach made a sepulchre or a breeding-place for frogs, insects, toads, lizards, and water leeches. I am, Sir, yours, &c.

Claremont Gardens, Nov. 17. 1830. CHARLES M'INTOSH.

ART. XII. *A new Mode of cultivating Potatoes.* By A GLOUCESTERSHIRE HORTICULTURIST.

Sir,

I HAVE cultivated potatoes, for three years past, in a novel and successful method.

The soil is a light sandy loam, from 18 in. to 2 ft. deep, with a dry bottom. If well manured, and the potatoes planted in the usual method, the tops generally run up long and weak, fall early, and the crop is injured. If the land is in indifferent condition, the soil being rather weak, the crops are small.

The ground is set out in rows of 2 ft. in width. The first 2 ft. are dug a full spade deep, and as much soil wheeled out to the other side of the piece as will allow the potatoes to be set 4 in. or 5 in. deep. These two rows of potato sets are planted at a foot's distance from each other, in the middle of the trench, and 10 in. or 12 in. in the rows, and covered with fresh dung. The next 2 ft. are not stirred, but the third 2 ft. are dug as the first, and as much soil thrown on to the first row as brings the ground to the level. I proceed thus, and plant only every alternate 2 ft., until the whole breadth is planted. Only one half of the land is planted, the other half remaining unstirred and lying at rest. I have planted in this manner just one chain of land; and the same land, in the year 1827, with beans; and in the year 1828 with potatoes, some the large white kidney, and some the blue moels. In the year 1828 I took up 10 sacks, which quantity was the average crop of the season. Mine were larger and a better sample than those of my neighbours.

Last year (1829) the same chain of ground produced 11½ sacks. The season being wet, the tops run up, and soon fell; but, as they lay on the unstirred ground, the crop was not injured.

Having taken a crop of beans and two crops of potatoes successively, I shall now change the ground and take the other half, which has rested and been unstirred for the last three years.

Thus less labour, less manure, with only one half of the land cropped, has produced full as large a crop of potatoes as the ordinary methods.

As I set the potatoes deeper in the soil than usual, I find but little earthing up is required.

I am, Sir, yours, &c.
A GLOUCESTERSHIRE HORTICULTURIST.

March 31. 1830.

PART II.

REVIEWS.

ART. I. *Transactions of the Horticultural Society of London.* Vol. VII. Part IV.

(*Continued from* Vol. V. p. 518.)

50. *An Account and Description of the Species and most remarkable Varieties of Spring Crocuses cultivated in the Garden of the Horticultural Society.* By Joseph Sabine, Esq. F.R.S. Secretary.

WE have already (Vol. V. p. 516.) noticed Mr. Sabine's devotion to this genus, and the liberal donation of his collection, the labour of nearly thirty years, to the garden of the Horticultural Society in 1818. "Many of these," says Mr. Sabine, "were received from Holland, several from seed, others from the public nurseries and private gardens in the neighbourhood of London; and for some of the most interesting I was indebted to my late valued and lamented friend Mr. George Anderson, whose rich collection in his garden at East Ham, in Essex, was a never-failing source of liberal supply to every curious collector. From Mr. Richard Williams of Turnham Green I received also several of much excellence: he has long been a diligent cultivator of crocuses, and has been fortunate in obtaining from seed some of the most beautiful of the varieties of *C.* vérnus which exist."

The different species of *Cròcus* did not attract the attention of botanists till a late period. Linnæus, in 1737, separated the autumn from the spring crocuses, making the autumn or saffron crocus *C.* satìvus officinàlis, and the spring crocus *C.* satìvus vérnus. Linnæus believed only in one species. Willdenow, in 1797, formed of Linnæus's varieties two species: the autumnal crocus he made *C.* satìvus, and the spring crocus *C.* vérnus. Botanical travellers have discovered many species in the south of Europe and the temperate regions of Asia, the habitats of the genus being confined to these two parts of the globe. A monograph of the genus was published by Dr. Goldbach in 1817, in the *Memoirs of the Imperial Natural*

History Society of Moscow, vol. v.; but subsequent discoveries render it incomplete. The same may be said of an attempt by M. Bouché, in the *Linnæa*, vol. v., in 1826. M. Gay of Paris has long been engaged in preparing a monograph of this genus, having cultivated most of the species under his own eye in the garden of the Luxembourg. In 1826, Bertoloni and Tenore published papers on the Italian crocuses.

> “What I now propose to communicate will not at all, I believe, interfere with or destroy the interest in M. Gay's projected monograph. It is not my design to take any notice here of the autumnal crocuses which we have in our gardens; these are all originally wild, and, consequently, natural species; whilst those spring plants, of which I do propose to give an account, may all, with the exception of *Cròcus pusíllus*, and of the native British *C. vérnus*, be considered as garden productions; or, if not originally so, they have been so long in cultivation as to have very much deviated from their native types; and the characters of the species I shall have to observe on having all, except those of *C. pusíllus* and *C. vérnus*, been deduced from garden plants, they will probably be found to differ much from those which belong to any one of the truly wild species. Those I propose to describe, and under which the varieties in the garden of the Horticultural Society have been arranged, are *C. susiànus*, *C. sulphùreus*, *C. stellàris*, *C. lagenæflòrus*, *C. lùteus*, *C. biflòrus*, *C. argénteus*, *C. pusíllus*, *C. versícolor*, and *C. vérnus*; all, without doubt, with the exception above stated, ancient occupiers of the flower-border, but only recently distinguished and separated from each other.”

Parkinson, in 1629, describes 27 kinds of spring crocuses, some of which appear to be lost; and some of his sorts, as well as of those of Miller, in his *Dictionary* of 1731, cannot be distinctly made out. Weston, in 1771, compiled a list of the genus Cròcus, 40 of which were spring-flowering ones; but it is doubtful if the plants were actually in existence at the time.

> “Of the species I propose to notice, *C. argénteus* and *C. lácteus* are new, and *C. pusíllus* and *C. vérnus* are the only natural species. The latter, though only noted by Linnæus as a variety, must be considered as founded by him. *C. pusíllus* was established by Tenore, *C. biflòrus* by Miller, and *C. lùteus* by Lamarck. The remaining species of this paper, *C. susiànus*, *C. sulphùreus*, *C. lagenæflòrus*, and *C. versícolor*, have all been formed, and first distinguished, in the different periodical botanical works which have in later times been published in this country.
>
> “The varieties of Cròcus in the lists of the modern Dutch gardeners vary from 20 to perhaps double that number; but they have only florists' names, they are without description, and are not arranged in any systematic manner; so that those belonging to different classes or species are not distinguishable from each other. The names given to crocuses, also, by the Dutch florists do not seem to be affixed by general consent; since their different catalogues frequently give different names to the same kinds. It is, however, from the Dutch collections that several of our best varieties, especially of those belonging to *C. vérnus*, have been procured.
>
> “New kinds from seeds are frequently raised both in England and in Holland; possibly, by more attention than has hitherto been paid to this part of their cultivation, much improvement in the beauty of these flowers may result. It will be seen that some very excellent varieties of the col-

lection which is now to be described have been so obtained. Cròcus vérnus sports more extensively, and produces more varieties than any other; but hitherto, as far as my observation has extended, a very large proportion of its seedlings are destitute of peculiar merit, and those which can be considered worthy of selection and description are of rare occurrence.

" In the year 1809, Mr. Haworth published in the *Transactions* (vol. i. p. 122.) of this Society a paper on the cultivation of crocuses, with a brief notice of some species and varieties, all garden plants, altogether amounting to thirteen kinds. It is much to be lamented that his description was not extended to all with which he was acquainted, and that he never communicated subsequently an account of the different kinds he knew. No one was at that time so well qualified as he was to give a complete account of the whole genus. His paper, in addition to the scientific descriptions, contains very useful instructions for the raising of seedling crocuses in boxes, a practice in which he had acquired much experience. Mr. Haworth describes 9 species; to all of these I have referred, considering 8 as distinct, and have placed the other species (*C.* obovàtus) among the varieties of *C.* vérnus, to which it appears to me strictly to belong.

" The cultivation and management of crocuses is not a matter of difficulty; they succeed best in a light dry soil, but do not like frequent removals. Many of the kinds increase rapidly by reproduction of their bulbs; but these blossom well, notwithstanding their being left very thick together. The new bulbs are formed above and on the old one, which is only annual, perishing after the reproduction of its progeny. Each old bulb produces one or more fasciculi or bunches of leaves, and a new bulb is formed at the base of each fasciculus; so that when only one fasciculus is produced, one new bulb only is formed, and the increase of the number of bulbs in each season depends on the number of the fasciculi of leaves. When they have been taken up, the bulbs should be kept out of the ground as little time as possible; the longer the planting of them is delayed, the more defective will be their appearance in the succeeding season. They may be planted either in circular patches in the borders, or in rows across narrow beds, and arranged according to their colours, their classifications, or periods of their flowering, as the fancy of the cultivator may direct. When planted in rows, the roots should be placed in double lines, the two lines being contiguous to each other; the effect to the eye by this is far superior to that produced by single lines. A collection looks best when planted in considerable quantity, and is particularly splendid when several beds are near to each other. A very good appearance is produced by planting a compartment thickly with various kinds, so as to cover the whole bed in any pattern that may be devised. The disposition of the kinds should be in broad, not narrow stripes; and the colours of the kinds placed next to each other should be well contrasted. When the plants are all in flower, the whole resembles a richly coloured carpet.

" The earliest kinds show their colours in the end of January or beginning of February, sooner or later according to the season; the blossoms of the general mass of the collection are in perfection through March, and the later-flowering varieties of *C.* vérnus continue in beauty during the best part of April.

" Crocuses require no protection in winter except from mice, which attack them very voraciously, frequently destroying the whole of the roots, if they are suffered to continue their depredations unmolested. Rabbits also will eat both the leaves and the flowers of several of the kinds; they are particularly fond of the varieties of *C.* biflòrus. The common house-sparrows, as has been noticed by Curtis (*Botanical Magazine*, folio 45.), are so fond of picking the blossoms, especially of the large yellow crocus, that they will soon destroy the beauty of a collection if they are not kept away; and, on this account, a plantation of the roots is best when situated at a distance from hedges, bushes, or buildings, which may afford shelter to these birds.

"The leaves of all the crocuses are at first short; when the bulbs are in blossom they usually appear shorter than the flowers, but they subsequently elongate much, and many grow to a considerable length before they decay. The practice of cutting away the leaves after the roots have done flowering is improper: this should never be done; they will readily separate from the bulbs at the proper season, and the removing of them earlier will materially injure the growth of the bulbs in the present, and the blossoms in the next, season. The seed-vessels rise above the ground, and the seeds ripen, much about the same time that the leaves are in a proper state for removal. At that period the seeds may be gathered; and they should be sown immediately. If the raising of the seedlings in boxes, as directed by Mr. Haworth, and the subsequent taking up and planting of the roots, be thought too troublesome, they may be at once sown in a dry and warm border, in which the young plants may remain till they blossom; and the selection of the sorts to be kept can thus be made from the original seed-bed. Such has been my own practice."

Class 1. *Spring Crocuses with Yellow Flowers.* Here are included all the species which have yellow or cream-coloured flowers, with their varieties. They are all early, being nearly all in full blossom before the principal varieties of *C.* vérnus. They are:—

C. susiànus, Cloth of gold Crocus.
*1. vulgàris.
2. mìnor.
C. sulphùreus, Pale Yellow Crocus.
*3. striàtus.
4. striatéllus.
5. isabellìnus.
6. cóncolor.
7. álbidus.
*8. *C.* stellàris, Starry Crocus.
*9. *C.* lagenæflòrus, Flask-shaped Crocus.
*10. *C.* lùteus, Common Yellow Crocus.
C. lácteus, Cream-coloured Crocus.
*11. cóncolor.
12. penicillàtus.

Class 2. *Spring Crocuses with various-coloured Flowers (not Yellow), having the Mouths of the Flower-tubes without Hairs.*

C. biflòrus, Scotch [†] Crocus. Purple flowers, in pairs, and the first to appear in spring. The blossoms precede those of *C.* susiànus. The earliest have some flowers open in the end of January if the season is mild, and all are in full flower in February; they have an agreeable but not powerful scent.
*13. communis, Scotch Crocus, with brown leaf-sheaths.
14. Parkinsòn*ii*, Scotch Crocus, with white leaf-sheaths.
15. stigmatòsus, Scotch Crocus, with elongated stigmas.

[†] Mr. Sabine says: "I have not been able to discover the reason why this has been called the Scotch crocus. The apparent authority for the appellation is Miller, who, in the first edition of his *Dictionary* in 1731, *says* it is commonly called 'The Scots crocus.'"

C. argénteus, Silvery Crocus.
*16. batávicus.
17. præ'cox.
*18. C. pusíllus, Small Crocus (from Italy).
C. versícolor, Party-coloured Crocus.

This species (versícolor) was first brought into notice as such by Mr. Bellenden Ker, then Mr. Gawler, in the *Bot. Mag.*, t. 1110., in 1808. Seedlings of this species are much disposed to vary; and it is probable that superior varieties may in future be obtained from it. The general external characters are as follows: — "The leaves spread widely, and are not very strong; some are, however, more upright than others. The blossoms are small, and appear early; they are more or less sweet-scented, with a tinge of yellow at the mouth of the tube; the petals varying in colour, but the external ones are more or less striped and feathered. The germen is striped with six purple lines; the anthers are yellow, strong, large, and stand high; the stigmas are bright-coloured and conspicuous. Most of the varieties produce seeds tolerably freely. The roots are rather large, ovate, and covered with a coarse ragged pale brown skin. The kinds described must be considered to possess the above characters unless their differences are particularly noted."

Mr. Sabine arranges the varieties, which, he says, have much resemblance to each other, under four sections: —

Sec. 1. *19. C. versícolor Gawlèri.
20. símilis.
21. negléctus.
Sec. 2. *22. C. versícolor purpùreus.
23. plumòsus.
24. venústus.
25. élegans.
Sec. 3. *26. C. versícolor violàceus.
27. Hawórthii.
28. lineàtus.
Sec. 4. *29. C. versícolor floribúndus.
30. pectinàtus.
31. Mórleon [?].
32. inconspícuus.
33. stellàtus.
34. propínquus.
35. affínis.
36. urbànus. This last variety is the nearest to white of the whole collection.

Class 3. *Spring Crocuses, with various-coloured Flowers (not Yellow), having the Mouths of the Flower-tubes hairy.*

This class, though it contains only one species, yet possesses more varieties than any other.

C. vérnus, Common Spring Crocus.

Various European habitats have been assigned to this species; the only certain one in England is a meadow on the Trent, south of Nottingham. The blossoms of the plants found there are produced before those of most of the garden varieties of the species.

"The varieties have been divided into six sections, founded on the prevailing colour, or peculiar markings, of each division. To those a seventh section has been added, consisting of those which flower so late, that they do not produce their blossoms till the exhibition of all the others has terminated. The bulbs of the different varieties vary in size; they are, however, generally small. They all produce more or less seed."

Sec. 1. Purple Vernal Crocuses; viz.

*37. *C.* vérnus punìceus.
38. purpùreus.
39. marginàtus.
40. Sabìn*i*.
41. grándis.
42. obovàtus.
43. concínnus.
44. Phàeto*n*.
45. maculòsus.
46. turbinàtus.
47. clavàtus.
48. *v*iolàceus.
49. dùbius.
50. pruinòsus.
51. fusifórmis.
52. stylòsus.
53. plúmbeus.
54. inflàtus.
55. *tulipàceus.*
56. pállens.
57. minùtus.
58. pállidus.
59. neapolitànus præ`cox.
60. *lilácinus* præ`cox.

Sec. 2. Variegated Vernal Crocuses; viz. —

*61. *C.* vérnus píctus.
62. fucàtus.

Sec. 3. Spotted Vernal Crocuses; viz.

*63. *C.* vérnus dorsàlis.
64. únguis.
65. únguis màjor.
66. leucorhýncus.

Sec. 4. Striped Vernal Crocuses; viz.

*67. *C.* vérnus pulchéllus.
68. lineàtus.
69. striàtus.

Sec. 5. Grey Vernal Crocuses; viz.

*70. *C.* vérnus Glorianéll*a*.
71. Gloriàn*a*.
72. variegàtus.
73. propínquus.
74. dentòsus.
75. bícolor.
76. reticulàtus.
77. gríseus.
78. pectinàtus.
79. incúrvus.
80. lineéllus.
81. obèsus.

Sec. 6. White Vernal Crocuses; viz.

*82. *C.* vérnus crássus.
83. Andersóni*i*.
84. párvulus.
85. trilineàtus.
86. obsolètus.
87. álbus màjor.
88. álbus mìnor.

Sec. 7. Late Vernal Crocuses. This section deserves particular attention, because all the varieties belonging to it flower late, and thus prolong the crocus season till the middle of April. The colours of all of them are dark purple.

*89. *C.* vérnus deléctus. Opens its blossoms in the end of March, and is in perfection in the beginning of April. "This is a crocus of much excellence; its time of flowering, its fine colour, and beautiful markings, combine to render it of great value."

*90. *C.* vérnus neapolitànus. "Remains perfectly in blossom into April."

*91. *C.* vérnus alpìnus. Opens its blossoms in the end of March, and continues perfect far into April.

*92. *C.* vérnus Aprìlis. "Not in full flower till the beginning of April, *and produces its* blossoms very abundantly till the middle of the month.

Too much cannot be said in commendation of this variety: during the whole of the first part of April it renders the garden gay with its richly coloured and numerous blossoms."

*93. *C.* vérnus tardiflòrus "The last to appear; coming out in April, and is in perfection in the middle of the month."

We have numbered these sorts in series, which, it appears, amount to 93. We believe all these sorts may be obtained from the Epsom nursery; and they may be ordered from that nursery, or from any other, by giving the above numbers, without the trouble of writing the names. It is clear from the above list, that no garden whatever, whether in town or country, need be without abundance of crocuses in flower from the first week in February till the last week in April. As no bulb is cheaper to purchase, more easy of culture, or increases faster in any soil or situation, it will be the fault of the possessors of gardens if they have not abundance of them in their borders. Whoever cannot afford to purchase all the above varieties may purchase their types, which we have marked with a star (*), and which amount to 24 sorts, save the seed, and raise varieties for themselves. Nothing, as Mr. Sabine has shown (p. 43.), can be easier; and, for a lady, few garden employments could be more agreeable. Mr. Sabine deserves the warmest thanks of all lovers of flowers, for the service which he has rendered to floriculture, by his attention to this very interesting family. This service, and those which he has rendered in introducing and describing chrysanthemums, pæonies, and roses, will remain and be remembered when his errors of management of the Horticultural Society have been corrected and forgotten.

51. *On the Cultivation of Air Plants in Stoves.* By Mr. Thomas Fairbairn, F.H.S. Read Sept. 2. 1828.

Mr. Fairbairn, when gardener to Sir Joseph Banks, at Spring Grove, in 1813, flowered the Aérides odoràtum very finely by the following treatment: — "I put the plant, when first received, into a basket with old tan and moss, and hung it up in the pine-house, where it was exposed to the summer sun, and to the fire-heat in winter; a tub of water was placed near it, so that I could take down and plunge the basket six or seven times a day, or as often as I passed it." Twelve years afterwards, when gardener to the Prince Leopold at Claremont, Mr. Fairbairn flowered Renanthèra coccínea, "with some variation, however, which cultivators may find an improvement: — First, some old rotten roots of fern and moss were collected, and put into the bottom of a china jar, in which the plant was placed; it was then covered nearly over with the same materials, and as roots were made they were covered with more moss; it was then suspended over the flue where the fire comes into the house, and a large water-pot, with a syringe, was always ready to give the plant a plentiful supply of water at every opportunity, by which means that part of the house was kept moist. I should add, that the young roots in winter time ought to be well covered from a strong fire-heat, as they may dry up too quickly. The east end of the house is to be preferred for suspending the baskets, boxes, or pots, in which the plants are grown: the water can be applied to them there both in the morning and in the afternoon; and they can be kept more moist there than if they were on the west side. The plants may be also placed on the flues, but in all cases it is necessary to keep them damp; and care must be taken to surround them with sufficient moss to retain the moisture."

52. *Upon the Cultivation of the Bouvárdia triphýlla.* By Mr. John Mearns, F.H.S. Read April 21. 1829.

"About the middle of April I collect all my bouvardias together, from the places where they have been kept through the dormant season; some among my orange tubs, others in cold frames, and others under the stage of the green-house. I turn them all out of their pots, shaking the soil completely from their roots; I thin off most of the large roots, yet retain as many of the fine fibrous ones as possible. I likewise, at the same time, cut down all the former year's shoots, retaining only two, three, or four eyes on each, according to the strength and age of the plants. I then plant them in pots suitable to the size of the plants, taking care neither to overpot them, nor to cramp the roots by confinement. When I have got all potted, and watered to settle the earth about their roots, I place them in a cold frame, which I cover with hay and mats at night; I keep the lights close during the night, and even in the day, unless the sun is very strong upon them, till they begin to grow, when I give them portions of air, according to the day, and their advance in growth. Subsequently I leave the lights off during the day; and, lastly, put them on at night. In about a week after they have been exposed I plant them finally out for the season, either in clumps by themselves, or distributed among other plants, when they are soon in fine bloom, and continue to flower till Christmas. By the autumn, some of the year's shoots will have attained nearly a yard in length, and will be crowned with fine luxuriant clusters of their splendid trumpet-like flowers.

As soon as I apprehend frost, I take up the plants with balls of earth attached to the roots, disturbing the young growing fibres as little as I can help, and place them carefully in pots that will admit of a little good mellow soil under the ball and around it. When they are thus replaced in pots, and watered, so as to settle the mould, those which are in luxuriant bloom I mix among my green-house plants, where they make a splendid appearance till January. When the plants begin to shed their leaves, and the flowers are nearly gone, I put them out of sight, as mentioned above, until April.

"I propagate the Bouvárd*ia* by cuttings of the roots, which I manage as follows: — I fill some large fruiting pine-pots with good fresh mellow loam, well blended with either thoroughly rotten dung or vegetable mould; I plant my roots all over the pot, beginning in a circle round the outside, opening the soil, and planting them with my middle finger, and continue filling up one circle with another till I finish in the centre of the pot or pots, leaving no more of the roots visible above the surface than just the top. I then water and place them in a hot-house, where the temperature is between 60° and 70°. As soon as the shoots get to between 4 and 5 in. high, I transfer the plants singly into pots of a small size, and by degrees harden them after they have been established. When they have made some progress after this transplanting, I plant them out into a bed 4 ft. wide, 8 in. between the rows, and 4 in. in the row; when, if the soil is good, many will soon be in flower. I pot them again before frost, and treat them as I described for my older plants."

53. *On the probable Cause of the Russet Colour in Apples* [*with a Remark on the supposed Influence of artificial Impregnation of Apple Blossoms with the Pollen of others*]. By John Williams, Esq. C.M.H.S., of Pitmaston, near Worcester. Read Oct. 7. 1828.

"The alternating temperature, light, shade, dryness, and moisture, which occur many times in the course of a day, when July and August are showery, are, I am inclined to think, from long-continued observations on the effects of different seasons, the causes of apples becoming bronzed with russet. Continued rain, preceded and followed by a cloudy sky, does not seem to produce the same effect; but the sudden intense light which commonly succeeds a shower, at the time the fruit is wet, injures the skin, and occasions small cracks, which, when viewed through a magnifying glass, resemble the cracked surface called the network of a melon. Cider and perry made from small cracked and spotted fruit, if a fine autumn succeeds a cold showery summer, is always of better quality than after a hot summer when the fruit is larger, and, as it regards appearance, better ripened. I have in no instance, after artificial impregnation of apple blossoms with the pollen of others, ever obtained any resemblance in form or colour to the apple I took the pollen from; and I have, on the average of the last 16 years, artificially impregnated 20 to 30 blossoms each. I have given the pollen of the Alexander apple to Golden Pippin flowers and Siberian, and *vice versâ;* but in no instance did the Golden Pippin or Siberian fruit become enlarged, or the Alexander apple, from the reversed process, become diminished in size."

54. *An Account of some new and little known Species of the Genus* Rìbes. By Mr. David Douglas, F.L.S. Read April 21. 1829.

Many species of *Rìbes* are indigenous both to North and South America, and in their native state produce excellent fruit, but scarcely any when removed to another climate.

Few shrubs are more ornamental than *Rìbes* sanguíneum; but its fruit in a natural state is of so very musky and unpleasant a flavour, that even the birds do not use it. The plant forms an erect branching bush, 6 ft. in height, with red smooth branches, leaves very like those of the black currant, but rather smaller, and showy pink or crimson flowers, succeeded by black berries. Its native habitat is in rocky situations, or on the shingly shores of streams in partially shaded places, never extending beyond the influence of the sea-breeze, and from 38° to 40°, and as high as 52° N. lat. on the coast of North-west America. It was discovered by Archibald Menzies, Esq., so long ago as 1787, during his first voyage round the world, but only introduced by Mr. Douglas to the Horticultural Society in 1826; and the plants raised from seed blossomed for the first time in April, 1828. This is a truly beautiful shrub, of the easiest possible culture and propagation. Blossoming early, and its flowers being so very showy, it ought to be in every shrubbery.

R. viscosíssimum *Pursh.* A large branching bush, 6 to 8 ft. high, with perfectly smooth dark-red bark. Faint yellow or whitish flowers, and dark brown or black berries.

" It is an inhabitant only of the subalpine range of the highest mountains, abounding in dry fissures of limestone rocks, flowering in May, and ripening its fruit in August. On the hills around the Kettle Falls on the Columbia River, in 48° 37′ 40″ N. latitude, 118° W. longitude, at an elevation of 8000 ft. above the level of the sea, it forms a principal part of the brushwood, and is equally plentiful on the western declivities of the Rocky Mountains, between the parallel of 46° and 52° N. latitude. This magnificent species ought to have a place in the gardens of the curious, were it only on account of it dissimilarity to any of the genus."

Seeds brought to England by Mr. Douglas in October, 1827; and the plants raised and flowered in the garden of the Horticultural Society in 1828.

R. cèreum. A more humble bush than either of the two former, and of a slender hàbit, but still attaining the height of 5 or 6 ft., with white smooth bark on the old branches, and the young shoots covered with a brown viscid scentless glutinous substance. Flowers white, and berries red. Hardy, and of easy culture, but not very beautiful. Seeds received in October, 1826; the plants raised from which flowered in April, 1828.

"On dry exposed decayed granite rocks or schist, throughout the chain of the river Columbia, from the Great Falls 45° 46′ 17″ N. lat. to the source of that stream in the Rocky Mountains, 52° 7′ 9″. This is a common shrub, flowering in March and April, and ripening its fruit in June."

R. petiolàre. Resembles *R.* nìgrum, particularly in its fruit. Seeds brought to the Horticultural Society in October, 1827; but they had not flowered when Mr. Douglas composed his paper, in April, 1829. We understand they have since flowered, and that the colour is not conspicuous.

"In deposits of decayed vegetable soil, washed down by the torrents from higher altitudes of the mountains, among coppice wood on the western base of the Rocky Mountains, from the 48° to the 52° N. lat. this species is frequently met with; and it is equally common on similar altitudes and situations in the high mountains of North-west America."

R. divaricàtum. A robust bush of erect habit, 6 or 8 ft. high, with whitish flowers and black berries; pleasant to the taste. Flowered in the garden of the Horticultural Society in April, 1828. "A common bush on the banks of streams near Indian villages, on the North-west coast of America, from the 45° to the 52° N. lat."

R. irríguum. A tall strong species, sometimes 10 ft. high, with white bark, cordate leaves, bell-shaped flowers [colour?], and spherical berries half an inch in diameter [colour?]; smooth, juicy, with a very pleasant flavour: "A constant inhabitant of moist mountain rocks, near springs and streams, flowering in May and ripening its fruit in July. On the Blue Mountains in 46° 33′ it is very common; also on hills on the banks of Spokan River. Of all the species which came under my observation during my journeys in America, this is the finest in the flavour of its berries, as well as in their size. It has not yet flowered in the Society's garden."

R. echinàtum. A slender reclining prickly bush, with brownish yellow flowers, and black hairy berries, small, but of a pleasant taste. "A common trailing shrub, on dry shelving rocky places on the mountains, at the Grand Rapids on the Columbia, and on the mountains of Northern California; never frequenting edges of rills or swampy ground in shady woods among *C*árices, as *R.* lacústre does. This species flowered for the first time, last April, in the Society's garden.

"Several undescribed species, from the same country as those above noticed, are in a growing state in the Society's garden; but, as no native dried specimens of these exist in this country, they cannot for the present be here noticed. Many other important additions of the genus *Ríbes* yet remain to be introduced to our gardens from America, among which two species of unrivalled beauty adorn the untrodden wilds of Northern California, which we hope, ere many years, to see as common in the gardens of England as *R.* sanguíneum now is; and although as fruits they are precisely alike, being peculiarly disagreeable, the splendour of their blossoms and varied foliage may procure for them a distinguished place in any garden."

55. *History and Description of the Species of Camélli*a *and* Thèa, *and of the Varieties of the Camélli*a *japónica, that have been imported from China.* By Mr. William Beattie Booth, A.L.S. Garden Clerk. Read Aug. 18. and Sept. 1. 1829.

This article may be considered a miniature of the work now publishing by Chandler and Booth under the title of *Camelli*èæ; and therefore, as we duly notice that work during its progress, we shall merely give a list of the species and varieties here described.

1. C. *Sasánqua,* Sasanqua, *or Lady Banks's* Camellia.
2. C. oleífera, Oil-bearing, *or Oil Seed-tree* Camellia.
3. C. *Kíssi,* Kissi, *or Nepal* Camellia.
4. C. *m*aliflòra, Apple-blossomed Camellia.
5. C. reticulàta, Reticulated, *or Captain Rawes's* Camellia.
6. C. japónica, Japan, *or Single Red* Camellia.
    1. álba plèna, Double White Camellia.
    2. fimbriàta, Fringed *White* Camellia.
    3. variegàta, Variegated, *or Double-striped* Camellia.
    4. rùbra plèna, Double Red Camellia.
    5. incarnàta, Incarnate, *or Lady Hume's Blush.*
    6. *a*nemoneflòra, Anemone-flowered, *or Waratah* Camellia.
    7. crassinérvis, Thick-nerved, *or Mr. Kent's* Camellia.
    8. *m*yrtifòlia, Myrtle-leaved Camellia.
    9. involùta, Involute-*petaled, or Lady Long's* Camellia.
    10. variábilis, Various-flowered Camellia.
    11. *Pompònia,* Pompone, *or Kew Blush* Camellia.

12. *pæoniæflòra* ròsea, Red Pæony-flowered Camellia.
13. *pæoniæflòra* pállida, Pale Red, *or Blush* Pæony-flowered Camellia.
14. *pæoniæflòra* álba, White Pæony-flowered Camellia.
15. semidùplex, Semidouble *Red* Camellia.
16. cárnea, Flesh-coloured, *or Middlemist's Red* Camellia.
17. atrorùbens, Black Red, *or Loddiges' Red* Camellia.
18. Welbánk*ii*, Welbank's *White* Camellia.
19. ròsea, Rosy, *or Le Blanc's Red* Camellia.
20. speciòsa, Showy, *or Rawes's variegated Waratah* Camellia.
21. imbricàta, Imbricate-*petaled*, *or Crimson Shell* Camellia.
22. Párks*ii*, Parks's *Striped Rose* Camellia.
23. Sabini*àna*, Sabine's *White* Camellia.

1. *Thèa* (from the Chinese *tsha* or *tchaw*, changed into *Thèa*) víridis. Green Tea. Introduced about 1768, by the late John Ellis, Esq., of the India House, who obtained it from seed. The flowers are delightfully fragrant like those of the orange, and the plant half-hardy.
2. *Thèa Bohèa*, Bohea, *or Black*, Tea. A more lax and upright shrub than the green tea, producing its flowers in greater abundance; and these do not open till a month after those of *Thèa* víridis. By no means so hardy as the green tea, and requires to be kept in a warm or airy situation in the green-house or conservatory during winter.
3. *Thèa* euryòides. First imported by the Horticultural Society, in 1822, by chance, as a stock for a variety of Camél*lia* japónica. The grafted portion of the camellia having died during the voyage, the stock survived, and was found to be this species of *Thèa*. It is figured in Loddiges's *Botanical Cabinet*, t. 1493., under the name of Camél*lia* euryòides.

   "Le Comte says (*Journey in China*, p. 228.) it grows from 2 to 200 ft. in height, and sometimes so thick that two men can scarcely grasp the trunk in their arms; but he afterwards observes that the tea trees in the province of Tokian did not exceed 5 or 6 ft. in height, which appears to be much nearer the truth, and agrees with the account given by Kæmpfer in his *Amœnitàtes Exóticæ*, p. 605., and by Osbeck in his *Voyage to China*, vol. i. p. 247. It is cultivated principally in valleys, or on the declivities of hills, having a southern exposure to the sun, and is said to bear considerable variations of temperature, flourishing in the northern climate of Pekin as well as about Canton.

56. *Upon the supposed Changes of the Climate of England.* By Thomas Andrew Knight, Esq., President, F.R.S. Read May 5. 1829.

Mr. Knight is of opinion "that our winters are generally a good deal less severe than formerly; our springs more cold and ungenial; our summers, and particularly the latter parts of them, as warm at least as they formerly were; and our autumns considerably warmer:" and he thinks that he can "point out some physical causes, and adduce some rather strong facts, in support of these opinions."

"Within the last fifty years very extensive tracts of ground, which were previously covered with trees, have been cleared, and much waste land has been enclosed and cultivated; and by means of trenches and ditches, and other improvements in agriculture, and covered drains, the water which falls from the clouds, and that which arises in excess out of the grounds, has been more rapidly and more efficiently carried off than at previous periods. The quantity of water which our rivers contain and carry to the sea in summer and autumn is, in consequence, as I have witnessed in many instances, greatly diminished; and upon the estate where I was born, and which I now possess, my title-deeds, and the form of the ground, prove a mill to have stood in the reign of Queen Elizabeth, and probably at a good deal later period, in a situation to which sufficient water to turn a mill-wheel one day in a month cannot now be obtained in the latter part of the summer and autumn. Under these circumstances the ground must necessarily become much more dry in the end of May than it could have been previously to its having been enclosed, and drained, and cultivated; and it must consequently absorb and retain much more of the warm summer rain (for but little usually flows off) than it did in an uncultivated state; and as water in cooling is known to give out much heat to surrounding bodies, much warmth must be communicated to the ground, and this cannot fail to affect the temperature of the following autumn. The warm autumnal rains, in conjunction with those of the summer, must necessarily operate powerfully upon the temperature of the succeeding winter; and, consistently with this hypothesis, I have observed that during the last forty years, when the weather of the summer and autumn has been very wet, the succeeding winter has been cold and cloudy, but without severe frost [This is in direct contradiction to facts stated in the *Magazine of Natural History*, vol. iii. p. 538.], probably in part owing to the ground upon the opposite shores of the Continent being in a state similar to that on this side the Channel."

Common laurels, in a high and cold situation, which usually lost a very large portion of the annual wood many years ago, were observed by Mr. Knight to escape all injury after such wet seasons.

"Supposing the ground to contain less water in the commencement of winter on account of the operation of the drains above mentioned (as it almost always will, and generally must do), more of the water afforded by dissolving snows, and the cold rains of winter, will be necessarily absorbed by it; and in the end of February, however dry the ground may have been at the winter solstice, it will almost always be found saturated with water derived from those unfavourable sources; and as the influence of the sun is as powerful on the last day of February as on the 15th day of October, and as it is almost wholly the high temperature of the ground in the latter period which occasions the different temperature of the air in those opposite seasons, I think it can scarcely be doubted that, if the soil has been rendered more cold by having absorbed a large portion of water at very near the freezing temperature, the weather of the spring must be, to some extent, injuriously affected. But, whether it be owing to the preceding or to other causes, I feel most perfectly confident that the weather in the spring has been considerably less favourable to the blossoms of fruit trees, and to vegetation generally, during the last thirty years, than it was in the preceding period of the same duration; and I shall in conclusion adduce one fact, the evidence of which I think cannot easily be controverted. The Herefordshire farmers formerly calculated upon having a full crop of acorns upon the oaks, which grew dispersed over their farms, once in three years; but a good crop of acorns is now a thing of rare occurrence, upon the value of which the farmer has almost wholly ceased to calculate, even upon those farms which contain extensive groves of oaks. The trees, nevertheless, blossom annually very freely, but no fruit is produced. Many causes may be assigned for the diminished produce of orchards, and of fruit trees generally; but the blossoms of the oak must be now as capable of bearing cold as they were half a century ago, and their failing to produce acorns can only be attributed to the agency of some external cause; and I am wholly unable to conjecture any such cause except the *above mentioned.*"

ART. II. *Memoirs of the Caledonian Horticultural Society.* Vol. IV. Part II.

(*Continued from* Vol. VI. p. 69.)

23. *Account of a new Mode of planting and cultivating Fruit Trees, with a View to prevent Canker, and to procure well-ripened Fruit.* By Mr. Archibald Reid, Gardener to the Hon. Robert Lindsay, at Balcarras, by Colingsburgh. Read Dec. 2. 1824, and Nov. 2. 1827.

This paper is of considerable importance, as clearly proving one cause of canker in fruit trees, and pointing out an effectual remedy. An orchard at Balcarras, in Fifeshire, containing above two acres, was stocked with fruit trees much infested with canker: their roots were examined, and found clean, healthy though but few in number, and without fibres. They had generally run to the depth of 3 ft., the depth to which the ground was trenched; and they would probably have run still deeper, but that a space under each tree was paved. Mr. Reid, in making experiments, found, "during the summer months, the average heat at 6 in. to be 61°; at 9 in., 57°; at 18 in., 50°; and at 3 ft. deep, 44° Fahr.: he therefore concluded, from these experiments, that if the roots could be retained near the surface, they would be in a more favourable situation than when allowed to run 2 ft. or more down in the soil. In autumn 1813, a few of the diseased trees, of about ten years' standing, were dug up and planted as near the surface as their roots would admit. These have continued ever since to improve, and are now (1827) bearing annually good crops, and are perfectly free from canker."

Preparation, in the mean time, was made for replanting with young trees within a few inches of the surface. A rich loamy soil was got together, and laid down in heaps of about a cubic yard to a tree.

"The ground having been previously trenched to about 2 ft. deep, and the distances of the trees marked out, a stake of from 3 to 4 ft. long was driven in the ground, about 6 in. north from the site intended for the stem of the tree, where a circle of 6 ft. diameter was drawn, and the soil within it was removed to the depth of 2 in. The place was then beat with a wooden rammer, and made as firm and smooth as possible, and of an equal depth all over. Before planting the tree the roots were carefully examined, and all bruised or broken parts cut off, leaving the slope upwards. The tree being placed at 6 in. south of the stake, one person held the stem fast, while I spread out the roots on the beaten surface of the circle, placing, if possible, the greater part of their extremities to the south; the tree was then pressed gently down, in order to make the roots rest close on the surface. As soon as the roots were adjusted, a third person laid on the fine mould, which I carefully distributed among the roots, pressing it with the hand till the roots were all covered. The remainder of the mould was then placed in a conical form, from the extremity of the circle to the stem of the tree. The place was then covered over with a little half-rotten dung, and this last covered with the earth first thrown out of the circle. About 2 ft. on each side of the stem the earth was flattened, and left in this state. The stem of the tree was then made fast to the stake with a hayband. If any of the large roots happen to be broken near the stem, before or during the operation of planting, as the new fibres of such roots are apt to force their way downwards, I always mark such trees, for the purpose of lifting and replacing after about four years' standing, in order to give the fibres of the broken root a horizontal direction, if found necessary."

The liability of the trees to have their roots broken during planting induced Mr. Reid to train the roots of a number of young trees, by spreading them out in the manner above described in a plot prepared for the purpose, and at the end of three years transplanting them as directed. The trees so trained "were removed to their new situations on a hand-barrow, the fibres retaining a great quantity of the soil when lifted." Twelve feet square formed the space allowed to each tree; the soil was kept clear of weeds by the Dutch hoe, but no vegetables were at any time cultivated on it. A top-dressing of rich compost was given once every three or four years. If the ground is ever dug for cropping, Mr. Reid is clearly of opinion that the plan will not succeed; though he thinks gooseberry bushes might be planted among the trees, and that they would bear and do well, at least for a time, without the ground being dug. He is "of opinion that breaking the surface, by hoeing and raking in dry weather, promotes the health of the tree, as well as the flavour and timely ripening of the fruit." For raking he uses a wooden rake, as not being apt to tear up the young roots. The trees so planted in 1815 and 1818, were found in 1824 to be "much more fruitful."

Trees so planted will, of course, not last so long as those which are allowed full liberty to penetrate deeper into a suitable soil; but Mr. Reid justly observes, that this disadvantage must be submitted to. His conclusion from the experiment is, that, "although canker is produced from various causes, the principal cause is deep planting in any soil, as that method is generally attended with the production of unripe wood.

"In a dry subsoil, the tree being deprived of nourishment, both from poverty of soil and want of moisture during the summer, vegetation often becomes stationary, and, towards autumn, sometimes is succeeded by a new growth of wood, liable to the same disease as the former."

In order to prove the beneficial influence of surface planting, Mr. Reid grafted a great number of the branches of the young trees with scions taken from the branches of the most diseased of the old trees; and he invariably found that the shoots produced by these scions, during a period of six years, were without canker, and carried good crops. The success of this experiment is attested in a letter to the Caledonian Horticultural Society by Mr. Reid's master, and by another gentleman, Colonel Spens of Craigsanquhar, a distinguished amateur horticulturist; and the London medal of 1827 was awarded to Mr. Reid.

The above paper, duly considered, ought to teach gardeners, what has been often inculcated in this Magazine, that it is improper to plant standard fruit trees in the compartments of a kitchen-garden, and that on very few soils can an orchard be dug with propriety. We have said all we can, on different occasions, to dissuade from growing any thing on fruit-tree borders, except the very lightest annual crops to shade the surface; but even for that purpose we prefer mulching. On many soils and situations an orchard will succeed very well, when the surface is covered with turf composed of the proper grasses, without the admixture of tap-rooted plants; but this will not hold in orchards with the trees planted on the surface. Mr. Reid says, "I tried grass, but it does not answer." The fruit of the trees becomes small, and is late in ripening; and the trees become subject to moss.

(*To be continued.*)

Art. III. *The Domestic Gardener's Manual, being an Introduction to Gardening; to which is added a concise Naturalist's Calendar and English Botanist's Companion, or Catalogue of British Plants, in the Monthly Order of their Flowering.* By A Practical Horticulturist. Whittaker, Treacher, and Co. London. Large 8vo, pp. 564.

No one, judging from the modest title of this book, can have any conception of what it really contains. The title is decidedly imperfect. It should have been called Chemical Horticulture, or rather the Philosophy of Horticulture. It is, indeed, quite evident that the talented author, though assuming only the humble cognomen of a "practical horticulturist," has chosen gardening merely as a medium for the purpose of promulgating his extensive knowledge and peculiar opinions as a chemist, not only on the phenomena of vegetation, but on that of nature in general.

Ever since vegetation has been studied by the philosopher, he has been invariably led to the conclusion, that the phehaving been already before the public, yet the accompanying remarks and observations, whether original or only illustrative, whether confirmatory or questionable, are all excellent. His criticism is fair and candid; and his profound knowledge of chemistry enables him to pierce into the mists of immaterial bodies, and launch into regions as yet but imperfectly explored, thereby giving new views of the constitution of nature, and of the pristine elements of things.

J. Main.

Art. IV. *Catalogue of Works on Gardening, Agriculture, Botany, Rural Architecture, &c., published since October,* 1830, *with some Account of those considered the most interesting.*

In enumerating the contents of the Botanical Periodicals, those genera or species marked by a star (*) are not included in the first edition of the *Hórtus Británnicus.*

Britain.

Curtis's Botánical Magazine, or Flower-Garden displayed; New Series. Edited by Dr. Hooker. In 8vo Numbers, monthly. 3*s.* 6*d.* col.; 3*s.* plain.

No. XLVI. for October, 1830, *contains*

3018 to 3024. — Jonès*ia* (Sir W. Jones, a zealous cultivator and patron of botany, as well as of other branches of science and of general literature) *Asòca.* A tree with fragrant, rich, orange-coloured blossoms; in common cultivation about Calcutta, and a native of the interior of the country and of the Mauritius. — Hydrástis canadénsis. "Because a representation of this plant does not exist in any generally accessible work with which I am acquainted, I have been glad of this opportunity of giving it a place in the *Botanical Magazine,* although the fruit is still a desideratum; and although it is not a plant that recommends itself as eminently deserving a place in our flower-gardens, save in those of the curious."— Prímula pusílla. Pale flowers, delightfully fragrant; an inhabitant of many parts of Canada, where it is not unfrequently mistaken for the real P. farinòsa. — *A'*rabis collìna. Purplish rose-coloured flowers; and will, in all probability, prove hardy. — *R*anúnculus montànus. Handsome, and well worthy of cultivation. — *S*cílla pùmila. — *C*ypripèdium parviflòrum. "*C.* parviflòrum of Old Series of *Bot. Mag.*, t. 911., should assuredly be referred to *C.* pubéscens."

No. XLVII. for November, contains

3025 to 3031. — *H*ibíscus *spléndens. A stove shrub from Mr. Fraser, who designates it "the king of all the known Australian plants." He has "seen it 22½ ft. high, and the flowers measuring 9 in. across, of the most delicate pink and crimson colour, and literally covering the entire plant." It has been in the country since 1828, but flowered for the first time in the Edinburgh botanic garden in May, 1830.—*S*axífraga petræ'a. — *Scorzonèra* móllis. — *S*elàgo *Gíll*ii.* An elegant undershrub from the Cape of Good Hope, by Mr. Beck to the Glasgow botanic garden. Discovered by Dr. Gill, after whom it is named. — *R*úscus andrógynus var. — Pleurothállis *saurocéphalus; *O*rchídeæ. Stove. — Diélytra (*dis,* twice, *elytron,* a cover; the two petals terminating in a bag or pouch: generally spelled Diclytra, and so in our *Hórtus Británnicus*) canadénsis.

No. XLVIII. for December, contains

3032 to 3038. — *G*ladìolus *psittacìnus. A splendid species; the spikes 1 ft. long; the tube of the corolla greenish with purple streaks, expanding into a campanulate spreading limb, the upper laciniæ of which are of a rich scarlet. Altogether, this is a very fine flower, for which "we are indebted in part to Richard Harrison, Esq., of Liverpool, in whose garden at Aigburgh it flowered during the latter part of the summer and autumn of the present year (1830); and in part to Mr. Hitchin of Norwich, the eminent cultivator of succulent plants. On taking up the root, at the end of the flowering season, Mr. Harrison was surprised to find that the solitary original bulb had been replaced by several fine large ones; and between them lay hundreds of gemmæ, each of which is, doubtless, capable of forming a new plant. These, we will venture to say, will be distributed with a liberality very different from the line of conduct pursued by a gardener at Leyden in Holland, where Mr. Harrison first saw the plant; and who, upon this gentleman's expressing a wish to possess a bulb, offered to send him one, '*when* he should have received a collection of orchideous plants from Mr. Harrison.' Such a want of confidence towards a well known horticulturist could not impress our friend with a very favourable impression of the possessor of this charming *G*ladìolus; and, of course, he declined all further communication with him. On his return, no sooner were Mr. Harrison's wishes made known to Mr. Hitchin, than he wrote to his friend and fellow-cultivator of succulents, the Prince de Salm Dick, for a bulb of *G*ladìolus psittacìnus, and it was forwarded to Mr. Harrison forthwith." We give the above extract in order to contrast the conduct of different botanists. On the general principles of human nature, he must be an unhappy man who wishes to keep every thing he has to himself, and not less unwise, in a worldly view, than unhappy. A botanist or gardener, to be happy, must bring into action the feelings of liberality, benevolence, and kindness, in short, of sympathy with all botanists and gardeners; as well as exercise the sense of justice towards all men. — Alstrœmèr*ia* *psittacìna. Deserving a place in every green-house, from the singular colour of its flowers. In the garden of the late excellent Robert Barclay, Esq., of Bury Hill, it has blossomed in the open border. — Crotalària verrucòsa. A stove annual from the East and West Indies, with flowers resembling those of the lupine. — *P*apàver *cròceum. A native of the Altai Mountains, sent to the Glasgow garden by Prof. Ledebour of Dorpat, in 1830. It resembles *P.* nudicaúle, but surpasses it in beauty. — Calceolària *bícolor. Corolla sulphur-coloured and white. — *Lophospérmum scándens, more correctly, as Mr. Sweet has shown (infra, p. 65.), L. erubéscens.

Edwards's Botanical Register. Continued by John Lindley, F.R.S. L.S. &c. Professor of Botany in the London University. In 8vo Numbers, monthly, 4*s*. coloured.

No. VIII. for October, contains

1356 to 1362. — *S*álvia fúlgens. A splendid perennial, from Mexico to the Horticultural Society, in 1829; but cultivated in the gardens of Madrid forty years before. Such are the disadvantages of kingly governments, and a rude or priest-ridden state of society. — Tillánds*ia* ròsea. — *C*ánna **Achìras.* From Mendoza to Mr. Lambert, who considers it the hardiest *C*ánna he has ever cultivated. — *Rìbes* *divaricàtum. A robust prickly shrub, bearing a gooseberry, from the north-west coast of North America. — Sparáxis *péndula; *I*rídeæ. A handsome conservatory plant, well worth cultivation. "In Mr. Herbert's conservatory, where it blossomed in June last for the first time in England, the flowering stems were 4 ft. high, and the length of the full-grown leaves 3 ft." The pendulous flowers are of a dark purple. — Zephyránthes *mesóchloa. A green-house bulb from Buenos Ayres to Mr. Mackay of the Clapton nursery, by his collector, Mr. Anderson. — *M*álva *purpuràta. A handsome cut-leaved perennial from the Chilian Andes to the Horticultural Society, by Mr. M'Rae, in 1825.

No. IX. for November, contains

1363 to 1369. — Bánks*ia* *littoràlis. Not uncommon in our conservatories, but rarely in flower. The drawing for the magnificent figure in the *Bot. Reg.* was made from a plant in the Syon conservatory, in March last. — *S*isyrínchium *grandiflòrum. A beautiful little herbaceous plant from the Columbia River, by Mr. Douglas to the Horticultural Society, in 1826. It has deep purple striated flowers in May and June; but is at present exceedingly rare, only two or three seeds having grown, and the plants from these increasing very slowly. — *S*piræ'a *ariæfòlia. A handsome hardy shrub from the north-west of North America, to the Horticultural Society as before. White flowers in June and July; quite hardy, 9 or 10 ft. high, and easily increased by cuttings. — Azàlea calendulàcea var. *subcùprea. A. nudiflòra var. thyrsiflòra. The flowers of the former are few but very large, and of a somewhat copper-coloured orange; of the latter, numerous, smaller, and of a deep scarlet. These, and upwards of 30 other hybrid varieties, the names of which we have selected for the Supplement to our *Hórtus Británnicus*, are " the results of some extensive experiments instituted at Highclere, the seat of the Earl of Caernarvon, for the purpose of improving the colours of the American azaleas by cross impregnation. Mr. Gowen, under whose direction the intermixture was made, has favoured us with the following particulars of these experiments, which may also throw light upon some physiological questions in which the world is much interested, but which cannot be satisfactorily settled without multiplied observations conducted with the utmost precision.

" I have much pleasure in giving you the history of the beautiful seedling azaleas which flowered last season in the garden at Highclere. Lord Caernarvon had long been desirous of raising seedlings from crosses between the light-coloured and late-flowering varieties. To effect this object, I selected for mother plants the Azàlea coccínea var. mìnor, A. coccínea var. màjor, and a late-flowering variety, called by some of the nurserymen A. rubéscens, by others A. autumnàlis rùbra. The two first-mentioned varieties are, in the climate of Highclere, and perhaps throughout England, very unproductive of pollen, rarely seeding when unassisted by art. A. rubéscens is somewhat more prolific, but, unaided, may be reckoned a shy seeder also.

" The two A. coccíneæ were dusted with the pollen of a late-flowering A. póntica for several successive mornings: no care was taken to deprive the plants experimented upon of their anthers, their deficiency of pollen having been ascertained. Many pods swelled, which were found to contain heavy seed; these were gathered at the approach of winter, kept in a drawer some weeks, and sowed in the first week in January. Of numbers which vegetated, about four hundred seedlings were raised. The A. rubéscens was impregnated with the pollen of A. calendulàcea var. triúmphans, and from this cross about a hundred were raised. Of the first-mentioned four hundred seedlings, perhaps three fourths are, in foliage, inflorescence, and habit, so like their father A. póntica, that, though varying much in the tints of the corolla, any person not aware of their origin would reckon them mere seminal varieties of that species, so greatly does its type predominate. Some are very lovely, especially one possessing extraordinary merit, which we have named A. póntica versícolor. Generally speaking, they run through many intermediate shades, from orange to the lightest cream colours, suffused with pink in A. póntica versícolor, and are very fragrant. The remaining fourth part of these seedlings take after their mothers in habit, but their foliage is on a larger scale. The inflorescence preserves little trace of A. póntica, yet varies considerably from that of either of the varieties of A. coccínea. The colours are more lively, and of various tints of crimson and vivid pink or scarlet; and there is in several, particularly in the specimen (A. thyrsifòlia) sent to you, a tendency more or less developed to produce flowers laterally. In some, the vivid pink and light crimson tints are very beautiful; and there is hardly an individual among them which, a few years ago, would not have been thought an acquisition to the garden. The seedlings from A. rubéscens, by A. triúmphans, were never with me the objects of so much solicitude as those just described. They surpass them greatly in magnificence, following generally the type of A. calendulàcea, and are very late-flowering plants, of many gradations of colours, from pale yellow to orange, salmon colour, pink, and beautiful mixed tints; they produce large umbels, with expanded corollas, are elegant in habit, and hardly to be surpassed in loveliness. Of those which flowered here last summer for the first time, we were able to discriminate sufficiently to give names to about 30 varieties, each of distinguished beauty or fragrance."

*R*ùbus *nutkànus, Nootka Raspberry. From North-west and North America, by Mr. Douglas to the Horticultural Society; resembling the *R*ùbus odoràtus, but with white flowers. — Anomathèca *cruénta. A desirable Cape bulb (*I*rídeæ), flowering from May till late in the autumn. Introduced by Mr. Tate of the Sloane Street nursery.

No. X. for December, contains

1370 to 1376. — *S*álvia Grahàm*i*. Found by J. G. Graham, Esq., near the mines of Tlalauxahua in Mexico, after whom it is named by Mr. Bentham, the reformer of this order of plants. A suffruticose plant, about 3 ft. high, with bright purple flowers, very handsome, about 1 in. long, including the calyx. "The plant begins to flower in July, and continues in beauty till October: its flowers are not so showy as those of the *S.* fúlgens and spléndens; but the richness of their purple, and their constant succession, amply compensate for inferiority of size. It should be planted out in the open border in May, and transferred to the green-house at the approach of frost; or if cuttings, by which it increases freely, are struck in the autumn, as a provision for another year, the old plant may be abandoned to its fate." — *Haylóck*ia* (so named by Mr. Herbert, in compliment to Mr. Matthew Haylock, who has the care of the collection of plants at Spofforth; and both there, and previously at Mitcham, in the course of the last 22 years, has brought no small number of plants, especially of this natural order, to blossom for the first time in this country) pusílla. A curious little green-house bulb, which "brings the western Amaryllí*deæ* near indeed to *M*elanthàceæ. With bulb, foliage, capsule, and seed that are scarcely distinguishable from Zephyránthes, it has a flower which is nearly that of a *C*ólchicum." — *R*òsa multiflòra var. platyphýlla. The most beautiful of all the climbing roses of our gardens. A native of China, where it is called the Seven Sisters' Rose; because about seven flowers open at the same time, and each varying from the other, from a pale rose colour to a deep crimson. It was introduced between 1815 and 1817. It comes nearest to *R*. m. var. Grevíll*ii*, but is more splendid, and requires greater care during winter to preserve its young shoots from being destroyed by frost. Its blossom buds are always formed on the twigs of strong two-year-old shoots; and an east or west wall, or open trelliswork, suits it better than a south wall. — *Pràt*ia* (in honour of M. Prat-Bernon, a young naval officer, who died on board the French discovery ship Urania) begon*iæfòlia*. Nearly allied to Lobèl*ia*, but distinguished by its baccate fruit. "A pretty little plant, found by Dr. Wallich in shady moist places in Nipal, and extremely well adapted for forming neat patches upon rock. It was thus cultivated when we saw it growing at Syon, in the collection of His Grace the Duke of Northumberland. Mr. Forrest informs us that it bore the rigour of last winter in a cold frame; that it was planted out upon the rockwork early in spring; and has been in blossom from April up to the period of the publication of this plate. It grows freely in a mixture of peat and loam, and roots at every joint, perfecting seeds abundantly. Some of the runners were 18 in. long."

Calceolària diffùsa. Resembles C. bícolor. "A half-hardy plant, growing and flowering beautifully in the open border during the months of July, August, and September; but requiring to be taken up at the approach of the cold season, and kept in a frame during winter. Propagated both by seeds and cuttings."—Palàv*ia* *rhombifòlia; *M*alvàceæ. An annual from Peru, which blossoms in the open border in August.—Coreópsis *Atkinson*iàna.* A perennial from Columbia; at first sight scarcely different from C. tinctòria, but in perfection later in the season, and then very interesting. Roots or seeds. "Named by Mr. Douglas in compliment to Wm. Atkinson, Esq., of Grove End, his tried and steady friend, to whom horticultural architecture is under obligations that posterity will not be slow to appreciate."

Botanical Cabinet. By Messrs. Loddiges. In 4to and 8vo Parts, monthly, Large paper, 5*s.*; small paper, and partially coloured, 2*s.* 6*d*,

Part CLXII. for October, contains

1611 to 1620.—Pimelèa glaúca.—*Maxillària Dépp*ii*; *O*rchídeæ.—A'rnica montàna. A native of the Alps, of easy propagation, and not without beauty.—**E*rìca Smith*iàna.*—*Daviès*ia* lineàris. A slender Australian shrub, with pea flowers and linear leaves.—Pentstèmon procèrus. A hardy perennial from North-west America; growing tall, and expanding its blue and purple flowers the greater part of the summer.—*A*nemòne alpìna.—*T*ussilàgo alpìna.—Chorizèma rhómbea.—*R*anúnculus illýricus,

Part CLXIII. for November, contains

1621 to 1630.—Houstòn*ia* purpùrea.—*E*rìca stellífera.—Habenària orbiculàta,—Dióсma tenuíssima.—*C*áctus grandiflòra,—Pentstèmon ovàtus.—*P*rùnus *sibírica. Pallas in the *Flòra Róssica,* informs us that in the month of May the south sides of the transalpine Daurian mountains are covered with this shrub-like flower, while the north sides are equally adorned with the *R*hododéndron daúricum.—*L*ílium *Busch*iànum.* Received from Mr. Joseph Busch of St. Petersburgh in 1829, and named after him.—Sinníng*ia* villósa.—*F*umària nóbilis, now *C*orydàlis nóbilis.

Part CLXIV. for December, contains

1631 to 1640.—*E*rígeron glabéllus.—Azàlea verticillàta. A large vigorous-growing species, flowering in the end of June, after the A. nudiflòræ have done, and very hardy.—*E*rìca fúlgida.—E'pacris *diosmæfòlia.—Eschschóltz*ia* califórnica.—*E*rýngium virgàtum.—Habenària tridentàta.—Silène compácta.—Gompholòbium pedunculàre.—Prímula farinòsa.

The British Flower-Garden. By Robert Sweet, F.L.S. &c. In 8vo Numbers, monthly. 3*s.*

No. XVII. for October, contains

65 to 68.—Prímula farinòsa, vars. 1, 2, 3.; first var. violet, second lilac, third snow-coloured. The snow-coloured variety is a very local plant, and rare in its native habitats, which are chiefly damp situations on limestone; the violet-coloured variety is found in peat earth on a similar substratum. These varieties were sent to Mr. Sweet from E. Leeds, Esq., of Manchester.—*Symphiándra (*symphyo,* to connect, *aner,* anther; anthers connected) péndula; Campanulàceæ. This singular and curious herbaceous plant from Caucasus to the Chelsea garden, in 1824.—**L*upìnus pulchéllus.

A handsome, upright, frutescent species, from Mexico to the elegant flower-garden of Mrs. Marryatt of Wimbledon House, Surrey, in 1828. Flowers dark blue, red, and purple; culture easy in common soil, and propagation by young cuttings under a hand-glass in spring or by seeds. — *Lophospérmum (*lophos*, a crest, *sperma*, seed) erubéscens. — Scrophulárinæ *A*ntirrhíneæ. A strong free-flowering green-house frutescent climber, and "a grand plant to turn out against a wall or trellis in spring." It is of rapid growth, and flowers freely; in the open air the flowers are of a deep purple, in the green-house of a purple lilac. It is certainly a great acquisition, and will rank in beauty with Mauránd*ya* Barclay*àna*. The country is indebted for it to A. B. Lambert, Esq., who procured seeds out of his dried specimens that were collected in Mexico by the botanists Sessé and Mocino, and with his accustomed liberality, distributed them freely to the collections around the metropolis. Mr. Sweet's drawing was made from the rich garden of Bury Hill.

No. XVIII. for November, contains

69 to 72. — Æthionèma *membranàceum; Crucíferæ. A pretty little suffrutescent rock plant from Persia, which thrives well in the open border, but will probably require the protection of a frame during winter; for which purpose some plants should be kept in pots. — Habránthus *Andersònii; Amaryllíd*eæ*. A beautiful bulb, with yellow flowers, tinged with brown and purple, produced the whole of the summer. It is a native of Buenos Ayres, whence it was sent to the Clapton nursery by Mr. Anderson, the collector sent out by Mr. Mackay, the predecessor of Mr. Low, now the very judicious manager of the concern. — Erythrònium Dens cànis. It seems that there are two species of Erythrònium in common cultivation; but, as Mr. Sweet observes, it appears strange that, though their striking specific differences were well known to the old botanists, they had escaped the attention of moderns, till the distinction of the species was pointed out to Mr. Sweet by Mr. Milne of the Fulham nursery. The other species is E. longifòlium, and is distinguished by its long narrow leaves, as the Déns Cànis is by its ovate leaves. — Dentària digitàta; Crucíferæ. A beautiful and rare plant, with bright light purple flowers in May and June. It is a native of various parts of the south of Europe, varies with white and purple flowers, and is of the easiest culture.

No. XIX. for December, contains

73 to 76. — Habenària lácera; Orchídeæ. A native of low meadows, from Pennsylvania to Virginia, with greenish flowers in July. Plants are at Bury Hill, and specimens in the herbarium of Mr. Lambert. From appearances Mr. Sweet supposes this plant "partial to peat soil, or some deep light earth, in a moist and somewhat shady situation; but, as it is at present very scarce, it will probably be some time before it can be procured, except by roots fresh imported from America. We have no doubt but the orchideous plants might all be readily raised from seeds, by planting turfs of grass on the plants, for the young plants to have to attach their roots to, when the seeds first vegetate, as they appear to be all more or less parasitic when in a young state, and die off as soon as they vegetate, if they have not some plant to attach their young roots to." — *P*hlòmis hérba-vénti. Raised in the Chelsea garden by Mr. Anderson, from seed received from Dr. Fischer. "It is a very handsome herbaceous perennial, continuing to produce an abundance of flowers the greater part of the summer, succeeding well in the common garden soil, and may be increased, though sparingly, by dividing the roots, or by seeds which sometimes ripen; it is well deserving cultivation in all collections of hardy flowering plants." — Heliánthus petiolàris. A handsome and very distinct species of annual sunflower, which continues in bloom from August to November. — Erythrònium longifò*lium*. *A native* of Italy and the south of Europe;

and for a long time confused with E. Dens cànis, though so well distinguished by the early authors.

The Florist's Guide and Cultivator's Directory, &c. By Robert Sweet, F.L.S. &c. In 8vo Numbers, monthly. 3*s*. coloured; 2*s*. plain.

No. XL. for October, contains

157 to 160.—Roi des Capucins Carnation. A bizarre; a very fine flower, plants of which are sold by Mr. Hogg at 10*s*. a pair. — Othello Ranunculus. This very dark crimson flower was raised this year by the Rev. Joseph Tyso (Vol. VI. p. 548. 626.) of Wallingford, from seed saved from dark flowers, such as Variat, Naxara, and Viola le vrai Noir; and purchased by Mr. Brown of Slough for five guineas. " There are a number of flowers in the same lot of seedlings which sold from one to three guineas, and several of the best are yet unsold." — Sherwood's Lady Crewe Tulip. White edged with rose colour, raised ten or eleven years ago by Mr. Sherwood, near Derby, and considered among the prettiest feathered rose tulips ever raised in England. Mr. Hogg is in possession of this and four or five other very fine roses, all raised by Mr. Sherwood, who, if he had lived, would have made 500*l*. by them. — *Brown's Superb Rose. A hybrid between *R*. índica and *R*. centifòlia, raised in the nursery of Mr. Brown, at Slough, and one of the most desirable roses that can be cultivated, as it is an abundant flowerer, and flowers at various seasons of the year.

No. XLI. for November, contains

161 to 164. — Holmes's King Tulip. Pretty, and very distinct; taken from a plant in the collection of J. P. Burnard, Esq., of Formosa Cottage, Holloway. — Hogg's Queen Adelaide Carnation. From the collection at Paddington Green. — Warris's Blucher Auricula. — Hogg's Prince George Tulip. A fine bybloemen, and suitable for the third row of the tulip bed.

No. XLII. for December, contains

165 to 168. — Lee's Globe White Slip Rose. Curious on account of its globular form. Raised by Mr. Lee, at Hammersmith, from the seed of *R*òsa villòsa. — Violet à Belle Forme Tulip. From the collection of Messrs. Brown, at Slough, where it is grown in the third row, and considered a good flower. " At Messrs. Brown's nursery tulips are grown in great perfection. — Maculàta Suprèma Ranunculus. Handsome; from a specimen that had been raised from seed by Mr. Waterstone of Paisley, who has raised numerous fine varieties of this flower, many of which are in the possession of Mr. Alexander of White Cottage, Alfred Street. — Bray's Invincible Pink. Handsome; from the select collection of Mr. Hogg, Paddington Green. Plants 2*s*. a pair.

Medical Botany, &c. By John Stephenson, M.D., and James Morss Churchill, Esq., Surgeon. In 8vo Numbers, monthly. 3*s*. 6*d*.

No. XLVI. for October, contains

179 to 182. — *D*ólichos prùriens; Leguminòsæ. Not uncommon in our stoves. The pods are brought from the West Indies, and being densely covered externally with short hairs, which penetrate the skin when touched, and cause a very troublesome itching, advantage has been taken of this irritative quality to expel worms from the human intestines. It has been supposed that the hair of the caterpillars of the procession moth (Lasiocámpa processiònea), so common in gardens, might answer the same purpose. The slaves in Guiana are so much afflicted with the round worm (*L*umbrìcus tères *L*.), that they and their children are regularly physicked with the cow-itch, *D*ólichos, and rhubarb every three or four months without *distinction*; and they are said to discharge so many worms that their stools

consist of little else. — *A*ristolòchia serpentària; *A*ristolòchiæ. This plant produces what is called the snake-root of North America, which is supposed to have a power of arresting the effects of the venomous bites of serpents. In this country it is used as a tonic and diaphoretic. — Garcín*ia* *Gambògia*, Gamboge Mangostan; Guttíferæ. " Although the gamboge of the materia medica is principally obtained from the Stalagmìtis *cambogiöìdes*, hereafter described, yet there is some reason to believe that the Garcín*ia* *Cambògia* of Linnæus, and several other plants of the natural order of the Guttíferæ, yield a substance very nearly, if not entirely, similar to that of the shops. This tree is a native of Malabar, growing in the forests of Travancore, where it is known to the natives by the name *Ghorkapuli;* flowering in March, and ripening its fruits in June and July." It is to be found in our stoves, though the *Stalagmìtis *cambogiöìdes*, a tree of Siam and Ceylon, belonging to the same order, and which furnishes the true gamboge, is not. This gum is obtained by incisions made in the trunk, and in those roots exposed to the sun. It is a violent purgative, and prescribed in dropsical affections. — *Coffèa* arábica. The mode of drying and preparing the berries of this tree is given in our *Encyclopædia of Plants*. " From experiments made chiefly by Cadet (*Ann. de Chim.*, lviii. 226.), it appears that coffee contains an aromatic principle, a little oil, gallic acid, mucilage, extractive, and bitter principle. The result of Cadet's experiments on sixty-four parts of coffee was as follows: —

Gum - - -	8·0	Albumen - - -	0·14
Resin - -	1·0	Fibrous and insoluble matter - -	45·05
Extract and bitter principle	1·0	Loss - - -	6·86
Gallic acid - -	3·05		

" As a general palliative, strong coffee is often serviceable in various kinds of headache; and where its own sedative power is unavailing, it forms one of the best vehicles for the administration of laudanum. It diminishes in some degree the hypnotic power of the latter, but counteracts its distressing secondary effects. When laudanum is intermixed with strong coffee for the cure of many modifications of headache, tranquillity and ease are produced, though there may be no sleep; when laudanum, on the contrary, is taken alone, sleep will, perhaps, follow, but is mostly succeeded by nausea, and a return of pain. Hence, the Turks and Arabians make strong coffee their common vehicle for opium, from its tendency to counteract the narcotic principle of the latter; and, on the same account, it is plentifully administered after the stomach has been evacuated of its contents, in cases of poisoning by opium.'

Nos. XLVII. and XLVIII. for November and December, which conclude Vol. III. and last, contain

183 to 185. — Cinchòn*a* Condamínea; *R*ubiàceæ. A lofty tree of New Granada and other parts of South America, exuding, when wounded, a yellow astringent juice. The leaves are ovate lanceolate; the flowers are small, tubular, and white. — C. oblongifòlia is a spreading much branched tree from Peru and Chile, in general appearance resembling the above. — C. cordifòlia is distinguished by its heart leaves. All the species of the genus Cinchòn*a* vary much in their leaves, according to the altitude at which they grow. The bark appears to be taken from several species and varieties: the origin of the use of this bark as a febrifuge is unknown. The truth of the story so often quoted respecting the Countess Chinchon, vice-queen of Peru, who is supposed to have been cured by the plant, and after whom it is named by Linnæus, is very doubtful. " In Loxa there is no document to be found that can elucidate the history of the discovery of the Cinchòn*a*: an old tradition, however, is current there, that the Jesuits,

at the felling of the wood, had distinguished, according to the custom of the country, the different kinds of trees by chewing their barks; and that, on such occasions, they had taken notice of the considerable bitterness of the Cinchòn*a*. The medical practitioners among the missionaries, it is said, tried an infusion of the Cinchòn*a* in the tertian ague. This tradition is thought to be less improbable than that which ascribes the discovery of its medicinal powers to the Indians; but why we cannot tell, unless it be that the civilised Europeans, and especially the English, are unwilling to admit the sagacity of any people whom they happen to consider in a savage state. Cinchòn*a* bark is stripped from the trunk and branches in the dry season; dried in the sun, and sent to Europe in chests, in pieces 5 or 6 in. long, singly or doubly convoluted. There are eight kinds, distinguished in commerce chiefly by their colours and textures. By analysis, this bark contains a basis of " woody fibre, combined with which are various principles capable of being extracted by different solvents. The taste of all is more or less bitter and astringent. Boiling water extracts all their active principles, affording a solution of a pale brown colour; this infusion is transparent when hot, but on cooling becomes turbid, and a precipitate is deposited which is soluble in alcohol. The decoction has a very astringent taste, and a deep brown colour. By long boiling, the virtues of the bark are nearly destroyed, owing to the chemical change and precipitation of its active matter. Alcohol, in all its modifications, is a powerful solvent of the active principles of Cinchòn*a*. A saturated solution of ammonia is also a solvent of them; but acetic acid acts less imperfectly than even water."

" From the experiments of Vauquelin, Fabroni, and others, it appears that the active principles of cinchonas consist chiefly of cinchonian resin, extractive, gluten, a very small portion of volatile oil, and tannin. Vauquelin has determined the presence of a peculiar acid, to which he gives the name of *kinic* acid in some varieties of the bark. The pale bark contains cinchonine, but a very small portion of quinine; the alkali, again, which predominates in the yellow bark is quinine; while in the red bark, and some spurious kinds, there is a combination of both these substances. The presence of cinchonine, as a distinct vegetable principle, was first discovered in Peruvian bark, by Dr. Duncan of Edinburgh. The separation of cinchonine from the pale bark, and of the quinine from the yellow, is a very simple operation. It consists in digesting the bark, coarsely powdered, in weak sulphuric acid; and then to repeat this digestion with about half the quantity of liquid, till all the soluble matter is extracted. To this decoction a small quantity of powdered slacked lime is added, somewhat greater than is necessary to saturate the acid: the precipitate that ensues (a mixture of cinchonine and the sulphate of lime) is collected, dried, and boiled a few minutes in alcohol, which takes up the cinchonine, but will not dissolve the sulphate of lime; the solution is decanted off *while still hot*, and fresh portions successively added for the repetition of the same operation, until it ceases to act on the residuum, which is then merely sulphate of lime. Quinine may be obtained from the yellow bark in the same manner that cinchonine is prepared from the pale bark, or by adding an alkali to a solution of the sulphate of quinine. Quinine is not crystallisable like cinchonine; but, on the application of heat, it melts into a kind of paste. It has a much more bitter taste than the other, and is very sparingly soluble in water. Pure quinine is very seldom used in medicine; but the sulphate possesses, in a very eminent degree, the medicinal properties of Peruvian bark, one grain or one grain and a half being equivalent to a drachm of the bark in substance. In Paris it has superseded, in a great measure, the Peruvian bark; and is now extensively used in this country, in all cases where that valuable medicine is indicated, in doses of from 2 to 5 grains. Peruvian bark has been long known as one of the most powerful and valuable tonics we possess, and may be administered with great freedom in all cases where that class of remedies is indicated. The only effects of an overdose are headache and nausea. It also possesses antiseptic and astringent powers in a very eminent degree, and is universally employed as a febrifuge in the cure of intermittent and remittent fever. Intermittent fever is the disease for the cure of which the bark was introduced into practice, and there is still no remedy which equals it in power; a superiority of which, from its known operation, it is difficult to give any explanation. Little diversity of opinion now exists with regard to the rules regulating its administration. It is given freely in the earliest stage of the disease, and without any previous preparation, farther than the exhibition of an emetic to evacuate the stomach."

Messrs. Stephenson and Churchill observe, that it is very agreeable to them to close " their *Medical Botany* with an intimation, the subject of which, they trust, may prove a valuable acquisition to the materia medica. We have had information that Sir Robert Kèr Porter, the British resident at Caraccas in South America, and who first introduced the knowledge of the *Guaco* plant (a nondescript species of Mikàn*ia*), with some of its seeds and extract, into this country, has liberally shipped off a large quantity of the plant from that country (entirely at his own expense) for England, so prepared as to enable our medical men to give full experiment to its alleged virtue, as an antidote to the poison of venomous reptiles, and as a preventive or cure of that terrific malady the hydrophobia."

A very useful tabular index of the names, botanical characteristics, parts used, operations, and uses, is given ; besides an index of English names, a glossary of terms, an explanation of abbreviated words, titles of books, and a list of plates. On the whole, the work is rendered very complete; it is very cheap, considering the excellent manner in which it is got up ; and we suppose it may be considered the best *Medical Botany* extant. Of this, however, it is but candid to state that we ourselves are not competent to judge; and that we have heard doubts upon the subject from those who ought to know, but who are probably not sufficiently impartial.

The Pomological Magazine. In 8vo Numbers, monthly. 5*s.* coloured; 3*s.* 6*d.* plain.

No. XXXVI. for October, contains

141. *The Ribston Pippin,* Travers's Apple, Formosa Pippin, Glory of York. Said to have been raised from seeds brought from Rouen in Normandy, about 1690, and sown at Ribston in Yorkshire. It having been doubted whether the old Ribston Pippin tree was a seedling or grafted, cuttings of the roots were sent to the garden of the Horticultural Society; and the shoots from these having fruited, and produced fruit in no respect different from other grafted trees of the Ribston Pippin, the fact of the original being a seedling is fully established. Such is the origin of an apple " of the highest excellence, and perhaps not to be surpassed."

It has been said that the Formosa Pippin was a Ribston, improved by the stock on which it was worked. On this subject Mr. Thompson has the following excellent observations: — " Still this made it nothing but a Ribston Pippin. It is well known that the stock will have an effect upon the variety worked upon it; so will the soil upon which it may be planted. The stock, the soil, the climate, and pruning, all have an effect; and a combination of these must have a powerful effect, but never that of producing a *permanently different* thing. If the Mignonne Petite Peach could be grown to equal in size the Grosse Mignonne, I would not even then alter my opinion; but when the *reniform* glands of the former can be changed by cultivation into *globose*, like those of the latter, it might then be admitted that one sort may be made into another, independently of being raised from seed.

"Those who read the account of the age of the parent tree of this excellent sort, and who express themselves in regard to it as being the best fruit of apple kinds, need not be alarmed at the statement of the old tree being in a state of decay, and producing latterly but sparingly, and the fruit becoming smaller than some had recollected to have seen it. Young trees may be found, free from canker, growing vigorously, and producing fruit perhaps superior to that ever procured on the original.

"Are all sorts of trees equally subject to canker? Some are more than others. Do young trees, or seedlings lately raised, never canker? Some of them will. The canker, therefore, does not depend entirely on the age of the variety. The nature, or the original constitution of the tree, or the quality of its sap or juices, is, perhaps, more the cause than its age. Soil and situation, if unfavourable, will stamp the symptoms of decay in a few years.

"There are no records to state the fact of any variety worth cultivating having *ceased to be.*

"An *annual* plant, raised from seed this season, might henceforth be continued by cuttings, so long as the earth and the elements continue nearly in the same state. Whether a *tree* may be also so continued may be inferred."

In perfection in November, and may be kept through the season. Standards, or dwarfs on the paradise stock in England, and on walls in the colder parts of the north.

142. *The Large Early Apricot,* A. gros précoce, A. de St. Jean, A. de St. Jean rouge, A. gros d'Alexandre, die grosse Früh Apricose. "The earliest apricot in England is a sort called the Masculine, little grown, and scarcely deserving a place in a fruit garden, except for its precocity. This kind, long known in France by the name above cited, is destined to supply its place every where, and to advance the period of maturity of good apricots to the middle of July in this country. In France it ripens on Midsummer day, whence its name of A. de St. Jean; but it will not do so here. Resembles the Roman Apricot, though its quality is better, and it precedes it by ten days or a fortnight.

143. *The Bezi de la Motte Pear,* Bein Armudi, Beurré blanc de Jersey. "One would have thought that a pear, which was pronounced by De la Quintinye, in 1685, likely to supersede the Doyenné blanc, would scarcely have been a century and a half without becoming common in the gardens of the wealthy English. Yet it is now, in 1830, scarcely known, although it possesses all the good qualities of the Doyenné, and many others besides. It is as good in flavour; it keeps better, not being out before the end of November; and is much more hardy, not being liable to crack, or become hard and skin-bound, in wet and cold seasons. It would seem to have originated in the East, as the Bein Armudi, a Turkish variety, has proved to be the same." Ripens in the beginning of October. Bears well as a standard, but better as an espalier.

144. *The Newtown Spitzenberg Apple,* Matchless. "A great reputation attaches to a class of American apples called the Spitzenbergs, of which this is the best; but they are not to be compared with such fruit as the Ribston Pippin, the Cornish July-flower, the Golden Harvey, and others of our fine English varieties. This is, however, an apple of merit. It bears well, is a pretty good bearer on a standard, and will keep till the end of January."

No. XXXVII. for November, contains

145. *The Saint Julian Apple.* Received by the Horticultural Society from the Luxembourg garden at Paris. A large fruit, with firm yellowish white flesh, rich, sweet, and excellent; a good bearer, and in perfection in December, January, and February.

146. *Breda Apricot.* A small fruit, of excellent flavour, and the tree in ordinary seasons bears remarkably well as a standard. Ripens from the beginning to the middle of August on walls, and its perfection is considerably prolonged on standards.

147. *The Barrington Peach.* A large, handsome, roundish fruit, of the first excellence, allied to the Grosse Mignonne, but perfectly distinct from that variety; coming in later, and in succession to the Royal George.

148. *The Nectarine Plum.* A large fruit, like a nectarine in shape and size, and decidedly the best large plum known. A good bearer, either on a wall or as a standard, ripening upon the former at the end of July.

In a postscript to this number we are informed that all the articles signed R. T. have been exclusively prepared by Mr. Thompson. They do him much credit; it is liberal and proper in the editors thus to do him justice, and we are sure the work will gain by it, because Mr. Thompson must necessarily be more deeply imbued with the subject of fruits than any other man in England.

We have not thought it worth while to give the synonymes to the names; because we think this may be more usefully done in the descriptive catalogue, which, with Mr. Thompson's assistance, we mean to give in our Supplement to the *Encyc. of Gard.*, and because they could be of very little use to nurserymen. There is only one course for these gentlemen to pursue, and that is, as soon as Mr. Thompson's catalogue appears, to procure scions and cuttings from the Horticultural Society, and propagate no longer from their old stock. Those who neglect this will neither do justice to themselves nor to the public. It is true, such nurserymen as Messrs. Ronalds, Gibbs, Pearson of Chilwell, and a few others, who have fruit-bearing specimens of all the apples, and perhaps of some of the other sorts of fruits which they propagate, may have it in their power to say that they send out nothing to their customers that they have not proved to be excellent; but that circumstance will not prevent the continuation of the present confusion in nursery nomenclature. We see no plan of preventing this, but beginning *de novo* with cuttings from the Society. We would also recommend all persons whatever who raise, or think they have discovered, new varieties of fruits, to send them first to the Horticultural Society, and leave their merits, their names, and their distribution among the trade entirely to that body. We should not have recommended this two years ago, when the Horticultural Society was proceeding on a monopolising system, and when its members consisted of two distinct classes: one, who had subscribed to the Garden, privileged to obtain things from it according to the amount of their subscriptions, their rank and influence; and another, who had not subscribed to the garden, who were not entitled to ask for any thing. Thanks to Mr. Ker, these days are gone; and something exists like equality of privileges on the part of the members, and liberality of treatment on the part of the officers of the Society.

No. XXXVIII. for December, contains

149. *The Horsforth Seedling Grape*, Rhodes's Grape (*Gard. Mag.*, Vol. II. p. 599.). Supposed "between the Black Hamburgh and the Muscat," but "there is no trace of the Muscat flavour in it. The skin of the berries is rather thicker than in the Black Hamburgh; the flesh is of about the same quality;" and the berries are as large as those of the Black Morocco. Rather a shy bearer, and a bad setter.

150. *The Isabella Plum.* Said by Mr. Miller of Bristol to be a variety of great excellence, and to stand next in the scale to the Green Gage, Coe's Golden Drop, and the Washington. "It is said to bear three crops a year;" shoots like those of the Orleans; leaves and flowers middle-sized; fruit 2¼ in. long, 1⅝ in. broad, of a deep dull brownish red colour.

151. *Padley's Pippin.* "Obtained by the late Mr. Padley, of the Royal

Gardens, at Hampton Court. One of the very best of our new apples in point of flavour. The trees are good bearers, and the fruit is in perfection during the months of December and January. It is, however, one of those sorts which are apt to shrivel, and therefore requires to be kept closely stored from the air."

152. *The Grey French Reinette*, Reinette grise. There are several varieties known under this name on the Continent, and the present seems one of the best. It succeeds well as a dwarf or half standard, grafted on a Paradise stock. "It requires a rich soil, but not too moist; and the tree must be pruned, so as to admit the rays of the sun and a free circulation of air among the branches. A good bearer; in perfection during the winter and spring, and is a dessert apple of the first excellence."

An Appendix to the above numbers, price 2*s*. 6*d*., contains a title-page and preface to vol. iii., lists of the most important varieties of fruits recommended for cultivation, and an index. The lists we have given in a separate article. (p. 111.) In the preface we are informed that the *Pomological Magazine* "was originally commenced by two officers of the Horticultural Society [Mr. Sabine and Mr. Lindley], in the hope of protecting the public, by means of accurate figures and descriptions, from the evil of making injudicious selections of fruit trees." It was also anticipated that some progress might be made towards settling the confused nomenclature of the more valuable fruits in cultivation. "Various causes have, however, induced one of the editors, upon whom at all times the greatest part, and latterly the whole, of the labour of conducting the work has fallen, to suspend it for the present, with the third volume; with the intention, however, of resuming it whenever circumstances shall justify his doing so. While the editor, in taking leave of his readers for the present, thanks them sincerely for the interest they have shown in the undertaking, he begs them not to ascribe any merits the work may possess, either to himself or to the gentleman formerly associated with him in the publication; but that they will understand that all claims it may possess upon the public favour belong to Mr. Robert Thompson, the superintendent of the fruit department in the garden of the Horticultural Society, to whom all that is most valuable in it is wholly due."

*Chandler and Booth's Illustrations and Descriptions of the Camell*ièæ, &c. In Imperial 4to Parts, every two months. 7*s*. plain; 10*s*. coloured; and 18*s*. extra-size.

Part V. for October, contains

17. Caméll*ia* japónica flòre álbo, *Single* white-flowered Japanese Camellai. Raised from seed of the Double-striped, by Messrs. Rollison of the Tooting nursery, about seventeen years ago. More robust than almost any of the other sorts; flowers abundant, and generally opening earlier in the season than those of other flowers. Flowers nearly 3 in. across, and not unfrequently striped or spotted with red. Seeds freely, and some fine double varieties with different-coloured flowers have been raised from it.

18. Caméll*ia* japónica rùbra plèna, Double red Japanese Camellia. Imported in 1794, by Sir Robert Preston of Valleyfield and Woodfield. Cultivated in many collections under the name of the Old Red and Greville's Red. Of a free and robust habit, and grows very erect; flowers but sparingly produced before the plant gets old, and hence this is not so much cultivated as some other varieties. "The flowers are about 3 or 3½ in. in diameter, and open at the same time as those of the *Waratáh* and A'tro-rùbens. They are of a crimson red colour, and resemble the flowers of a large double *H*ibíscus."

19. Caméll*ia* japónica *pæoniæflòra* ròsea, Rosy Pæony-flowered Japanese Camellia. Imported by Captain Welbank, for Charles Hampden

Turner, Esq., of Rooksnest, Surrey, about 1810. The three varieties of the Pæony-flowered Camellia, viz. the Pompone, the Red, and the Blush, are so much alike in habit, growth, and foliage, that, unless when in flower, they cannot be distinguished. (See Vol. VI. p. 471.)

20. Camél*lia* japónica *a*lthææflòra, Hollyhock-flowered Japanese Camellia. Raised by Mr. Chandler of the Vauxhall nursery, in 1819, from seeds of the *Waratáh*, which it in some respects resembles. Well deserving a place in every collection.

Floral Illustrations of the Season. No. VI. 4to. 9*s*.

The plants figured are, Salpiglóssis pícta; *I*'ris variegàta; *D*elphínium grandiflòrum; *L*ílium cóncolor; Pentstèmon ovàtus; *G*èum *Quéllyon; V*erbèna *c*hamædrifòlia; *L*ìnum narbonénse. These plants are all most beautifully drawn and coloured.

Loudon's Illustrations of Landscape-Gardening, &c. In Atlas folio Parts, half-yearly.

Part II. for January, 1831, *contains*

V. Design for a Public Garden near Bristol. By P. Masey, Jun.

VI. Diagram of Circles, representing all the different Natural Orders and Tribes of Herbaceous Plants, according to the Jussieuean System, of Sizes proportionate to the Quantity of Species and Varieties in each Order and Tribe; arranged for the Purpose of enabling Gardeners, Architects, and Surveyors to compose Botanic Flower-Gardens. By J. C. Loudon.

VII. Diagram of Circles representing all the different Natural Orders of Trees and Shrubs, according to the Jussieuean System, of Sizes proportionate to the Quantity of Species and Varieties in each Order and Tribe; arranged for the purpose of enabling Gardeners, Architects, and Surveyors to compose Jussieuean Arboretums, Jussieuean Shrubberies round Kitchen-Gardens, and to lay out or arrange all the Planting of a Country Residence, according to this System, combined with pictorial Effect. By J. C. Loudon.

VIII. A Country Residence surrounded by Ten Acres of flat Surface, laid out and planted according to the Natural System; in which an attempt is made to combine a Maximum of botanical Interest, pictorial Effect, useful Accommodation, and elegant Convenience, in a Minimum of Space of natural Advantages. By J. C. Loudon.

The two Parts of this work just completed may be considered as elementary, and containing, in a great measure, the essence of all that is to follow. Plate VIII., and its description, show what a world of botanical enjoyment and varied picturesque effect may be obtained in a spot of only 10 acres, laid out as a country residence. But the enjoyment in this case, as in every other, will depend on the mind of the enjoyer: if he is without a knowledge or taste for plants, and can see no beauty in the grouping and massing of trees, such a spot, so laid out, will be in a great measure lost on him. The poetry of all nature and art lies in the mind.

When we commenced this work, knowing that it would have a very limited sale, and that gardeners could not purchase it unless it were very low priced, we undertook its publication on our own account; and not foreseeing all the expenses which we should have to incur, we fixed the price much too low. We cannot adhere to that price for Part II., which may be purchased by gardeners for 10*s*. 6*d*. till the 1st of April next; but, after that period, the price to gardeners and all others will be 15*s*. each for Part II., and that price (15*s*.) will commence for Part I. on February 1. Future

Parts will be published at 10*s*. 6*d*. each Part to gardeners; and, after the first three months, 15*s*. to gardeners and all others. Instead of publishing every three months, we shall in future publish only every six months.

If any purchaser thinks our rise of price unreasonable, if he will call on us, we will prove to him something very different; and if any one should think that, by changing the day of publication from three months to six months, we mean to discontinue the work, let him also call, and we will show him impressions of the eight plates which are to constitute the next two Numbers.

Doyle, Mr. *Martin*, author of *Hints to Small Farmers:* Irish Cottagers. Dublin. 1830. Small 8vo. 2*s*. 6*d*.

The great and deserved popularity of the *Hints to Small Farmers* induced us to see with complacency another work by the same author, particularly as, from the title, we had hopes of finding it an Irish adaptation of Mrs. Hamilton's excellent *Cottagers of Glenburnie*. We are sorry to say, however, that the author does not appear to us to have fully developed the idea with which he set out. The two first chapters led us to expect that the progress of a young Irish couple would be traced through all the various trials of their married life; and, after having been introduced to such interesting personages as Mick Kinshella and his wife, we were quite disappointed to hear afterwards so very little about them. Notwithstanding this blemish, there is much both to amuse and instruct in this little volume; and we have no doubt of its doing very essential service to those for whose benefit it was written. The characters of the Irish peasantry are sketched with great spirit; and the scene at the Sessions, and that of the unfortunate result of the expedition undertaken to redeem the remains of Peter Dempsey from the " body-snatchers," are not only true to life, but highly amusing. — *J. W. L.*

Smith, *Thos.*, Liverpool: Lessons on Arithmetic, in Principle and in Practice, for the Instruction of the Youth of both Sexes, and more especially for that of young Merchants, Tradesmen, Seamen, Mechanics, and Farmers. London, 1830. Small 8vo. 3*s*. 6*d*.

We have peculiar satisfaction in recommending this work to gardeners, which, for its clearness and comprehensiveness, is well calculated to assist those who in a great measure educate themselves, in acquiring one of the most useful kinds of knowledge. The necessity of a competent skill in in arithmetic to persons of all classes is a fact too universally acknowledged to need discussion; and it must also be allowed, that any one who publishes a cheap work, tending to facilitate the acquisition of useful knowledge, confers an important benefit upon his fellow-creatures. To write an elementary work well, an author should not only perfectly understand the subject of which he treats himself, but he should also be able to make others understand it; and experience proves that this latter quality is much the rarer of the two. It is very difficult for a writer who is completely master of a subject to level his ideas to the comprehension of a tyro; and he is apt to forget that what is become easy to him, is still a mystery to the greater portion of his readers. Mr. Smith has carefully avoided this fault. He begins at the beginning, and, assuming that his readers know nothing of the science in question, he proceeds, step by step, preferring to explain even what was self-evident, rather than to run the risk of leaving any thing obscure. As Mr. Smith's work is intended principally for " untaught artisans," &c., arrived at the age of adolescence, it is more calculated to exercise the reason than the memory, and may indeed be called the *rationale* of the science it professes to teach: it accordingly asserts nothing without explaining why such a rule has been deemed necessary; and it is not possible for any one to peruse it without feeling his mind enlarged, and his thinking powers called into action. After speaking thus highly, and we trust justly, of the merits of the work, we have only to regret that we find any thing which appears deserving blame. There is one paragraph in the preface which we could wish expunged. It is that in which Mr. Smith, after having explained his own views, censures the labours of others who have trodden in the same path. This, to say the least of it, is in bad taste, and is unnecessary: if, as we conscientiously believe, Mr. Smith's work really is superior to most works of the same kind, he may rely upon its meeting with proper attention and encouragement; and if it is not, nothing that he can say in disparagement of its rivals will be of any avail. Mankind are now, generally speaking, too enlightened to be dictated to on such subjects, and works, whether good or bad, very soon find their true level.

Mr. Smith's language is plain, and his plan simple. He first gives some very clear ideas of the value of figures in notation, and then proceeds to explain the four great rules of Arithmetic; viz. Addition, Subtraction, Division, and Multiplication; which, he says, may be characterised simply as modes of joining and separating: the two latter being only amplifications of the two former. After fully explaining and exemplifying the usual signs or marks employed in arithmetic, Mr. Smith enters upon the more difficult branches of the science, and renders all the mysteries of Compound Arithmetic, Fractions, Decimals, and Duodecimals perfectly clear and easy of comprehension. The whole of this part of the work must be studied to be fully appreciated; but we may add that we were particularly pleased with that portion which treats of Progression and Proportion, and of the Ratios of Numbers. The paragraphs are numbered instead of the pages, for the purpose of more easy reference; and though the examples given are few, they are so clearly applied to the rules as to answer every purpose which could be desired. We dislike the conclusion; and think the work would be much improved by the omission of all that follows the paragraph containing the Roman Numerals. — *J. W. L.*

Lindley, *John*, Esq. F.R.S., L.S., G.S., &c., Professor of Botany in the University of London: An Introduction to the Natural System of Botany; or, a Systematic View of the Organisation, Natural Affinities, and Geographical Distribution of the whole Vegetable Kingdom; together with the Uses of the most important Species in Medicine, the Arts, and Rural or Domestic Economy. London, 1830. 8vo, pp. 400.

This volume exhibits a comprehensive mass of most valuable information. England, as it is well known to the masters in botany, is far behind the Continent, and particularly behind France, in the reception and practical adoption of the natural system of classification. From this cause the Continent teems with numerous writings, by a great variety of most able authors, each illustrative of some particular department of the natural system; while England, though far from unproductive in Linnean publications, has yet produced but few in the way of natural arrangement. But the Continental works above alluded to, in which the most important scientific information may be found, in which the most excellent and valuable views are exhibited, have hitherto been perfectly inaccessible to a vast majority of English lovers of plants, either from the number and expensiveness of the works themselves, or from the circumstance of their being published in Latin, or in some of the languages of the Continent. It is, then, with the highest satisfaction that we behold the present work by Professor Lindley, whose most meritorious labours have dispensed with the necessity of procuring these numerous Continental works, and of translating them when procured, by supplying us with the essence of them all in one single volume, and this volume in English! Let us not, however, be understood to adduce these considerations as the only recommendations this work possesses: on the contrary, Professor Lindley has enriched it throughout with original views and remarks of the very first moment to the universal interests of botany.

The natural system is the classification of plants according to the likeness they bear to each other. This system originated with the first attempt of man to reduce natural history to a science, and was persevered in by a succession of systematists from the earliest periods to those of Lobel, Cæsalpinus, Ray, and the celebrated Tournefort; the last of whom wrote in the end of the seventeenth century. "At this time," says Professor Lindley, "the materials of botany had increased so much, that the introduction of more precision into arrangement became daily an object of greater importance; and this led to the contrivance of a plan which should be to botany what the alphabet is to a language, a key by which what is really known of the science might be readily ascertained. With this in view, Rivinus invented, in 1690, a system depending upon the conformation of the corolla; Kamel, in 1693, upon the fruit alone; Magnol, in 1720, on the calyx and corolla; and finally, Linnæus, in 1731, on variations in the sexual organs. The method of the last author has enjoyed a degree of celebrity which has rarely fallen to the lot of human contrivances, chiefly on account of its clearness and simplicity; and in its day it undoubtedly effected its full proportion of good. Its author, however, probably* intended it as a mere substitute for the natural system, for which he found the world in his day unprepared, to be relinquished as soon as the latter could be settled; as seems obvious from his writings, in which he calls the natural system *primum et ultimum in botanicis desideratum* [the first and last object of botany]. He could scarcely have expected that his artificial method should exist when the science had made sufficient progress to enable botanists to revert to the principles of natural arrangement; the temporary abandonment of which had been solely caused by the difficulty of defining its groups. This difficulty no longer exists: means of defining natural assemblages, as certain as those employed for limiting artificial divisions, have been discovered by modern botanists; and the time has arrived when the ingenious expedients of Linnæus, which could only be justified by the state of botany when he first entered upon his career, must be finally relinquished. We now know something of the phenomena of vegetable life; by modern improvements in optics, our microscopes are capable of revealing to us the structure of the minutest organs, and the nature of their combination; repeated observations have explained the laws under which the external forms of plants are modified; and it is upon these considerations that the natural system depends. What, then, should now hinder us from using the powers we possess, and bringing the science to that state in which only it can really be useful and interesting to mankind?"

"The principle upon which I understand the natural system of botany to be founded is, that the affinities of plants may be determined by a consideration of all the points of resemblance between their various parts, properties, and qualities; and that thence an arrangement may be deduced in which those species will be placed next each other which have the greatest degree of relationship; and that consequently the quality or structure of an imperfectly known plant may be determined by those of another which is well known. Hence arises its superiority over arbitrary or artificial systems, such as that of Linnæus, in which there is no combination of ideas, but which are mere collections of isolated facts, not having any distinct relation to each other.

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* We say *certainly*, as the *Fragments of a Natural Method* which Linnæus left behind him sufficiently show. See Smith's *Grammar of Botany.*

"This is the only intelligible meaning that can be attached to the term Natural System, of which Nature herself, who creates species only, knows nothing. It is absurd to suppose that our genera, orders, classes, and the like, are more than mere contrivances to facilitate the arrangement of our ideas with regard to species. A genus, order, or class is therefore called natural, not because it exists in nature, but because it comprehends species naturally resembling each other more than they resemble any thing else.

"The advantages of such a system, in applying botany to useful purposes, are immense, especially to medical men, with whose profession the science has always been identified. A knowledge of the properties of one plant is a guide to the practitioner, which enables him to substitute some other with confidence which is naturally allied to it; and physicians on foreign stations may direct their enquiries, not empirically, but upon fixed principles, into the qualities of the medicinal plants which Nature has provided in every region for the alleviation of the maladies peculiar to it. To horticulturists it is not less important: the propagation or cultivation of one plant is usually applicable to all its kindred; the habits of one species in an order will often be those of the rest; many a gardener might have escaped the pain of a poisoned limb, had he been acquainted with the laws of affinity; and finally, the phenomena of grafting, &c., those curious operations, which form one of the grand features of distinction between the animal and vegetable kingdoms, and the success of which is wholly controlled by the ties of blood, can only be understood by the students of the natural system."

These quotations sufficiently evince the intelligible manner in which the author discusses his subject. We shall only say, in conclusion, that we confidently trust that this *Introduction to the Natural System* will speedily find its way into the hands of all who are anxious to attain such a knowledge of plants as will be permanently and extensively useful. Should difficulties be found in the technical parts of the book, the tyro may rest assured that they will speedily vanish before the march of his research. From the commencement of the Gardener's Magazine we have always warmly recommended the adoption of the natural system; and it is our intention, now Professor Lindley has produced this Introduction, to promote its circulation by every means in our power, and to second his efforts, by explaining and illustrating the contents of the work, whenever opportunities shall come in our way. — *R. S.*

Hardcastle, Lucy: An Introduction to the Elements of the Linnean System of Botany, for Young Persons. London, 1830. Post 4to, pp. 154. 120 wood-cuts. 8*s*.

Alman, ——, M.D., Professor of Botany to Trinity College, Dublin: An Analytical Arrangement of Plants, &c. Dublin, 1829. 8vo.

Jones's Views of the Seats, Mansions, Castles, &c., of Noblemen and Gentlemen in England, Wales, Scotland, and Ireland; with other Picturesque Scenery, &c., engraved in the first possible Style of the Art, from original Drawings, taken expressly from the Objects themselves, for this Work, and forming Part of the General Series of Jones's "Great Britain Illustrated; or, Picturesque and Architectural Beauties of England, Wales, Scotland, and Ireland, displayed in a Series of superior Engravings on Steel, by the most celebrated Artists, from original Drawings. Including all the modern grand National Improvements in the United Kingdom, accompanied by historical, topographical, and critical Illustrations." Part I. 4to, with 17 splendid Engravings on Steel. To be completed in 12 Parts, price 4*s.* each.

This is a highly finished work as far as the engravings are concerned, and certainly no publication of the kind was ever produced at so low a price. There are two views given in a quarto page, each 5 in. by about 3½ in.; and there is, on an average, about a page and a half of description to each plate. The defect of the work is, that these descriptions are much too short, and that they are historical and laudatory, without being at the same time descriptive and critical. Such descriptions, indeed, as we should wish to see accompany these elegant plates, could only be made on the spot by an artist of taste. But if they included the gardens and grounds, and were made by an acute observer and honest man, they would have a powerful effect in improving the taste of country residents. Without them, the work is still of the greatest value as a collection of engravings of the finest country-seats in the world; and being so remarkably cheap, we recommend it to all who can afford to indulge in this description of luxury.

Plantation Journals; containing Tables for every Department connected with the Business of Planters, and forming a complete Diary for the Year. London, 1830. Letts and Son. 2*l.* 2*s.*, each Table to be half-bound.

Matthew, Patrick: A Treatise on Naval Timber, Marine, and Arboriculturine; to which are added, Critical Notes on Authors who have recently treated the Subject of Planting. Edinburgh. 8vo.

We have just received this goodly volume, and shall look into it in time to prepare a critique for our next Number.

M'Nab, William, A.L.S. C.M.H.S., &c., Associate of the Medico-Botanical Society of London, Superintendent of the Royal Botanic Garden of Edinburgh, &c.: Hints on the Planting and General Treatment of Hardy Evergreens in the Climate of Scotland, &c.

Evergreens, Mr. M'Nab observes, are much more sparingly cultivated in Scotland than good taste would dictate. One of the reasons is, certain erroneous opinions respecting their treatment, which it is his object to correct. He is "quite persuaded, that the chief cause of failure in the cultivation of these most ornamental plants proceeds from the uncontradicted promulgation of certain instructions regarding the season and manner of planting." The seasons recommended by most authors are, "early in autumn or late in spring, that is, in August or September; or in the end of March, in April, or early in May." Five out of six nurserymen will tell you, "spring or autumn; or, perhaps, early in autumn, or late in spring." Practical gardeners will give the same answer. Examine a nurseryman's books, and you will find that the greatest number of orders have been recorded in April and May, and the next greatest number in August and September; "very few are sent out at any other time; all showing that the general feeling is, that spring and autumn are the best seasons for planting evergreens." Mr. M'Nab's experience has taught him, that evergreens of all kinds may be planted at all seasons of the year, with nearly equal success, except from the middle of June to the middle of August. He prefers, however, "late in autumn, winter, or very early in spring; that is, any time from the middle of October till the middle of December, always provided that the weather and the ground are favourable: that is, supposing there is no frost, no drying wind, nor much sunshine, and that the ground is not too much saturated with wet, either from continued rain, or from the nature of the soil.

One of the principal things to be attended to in planting evergreens is, to fix on a dull day for winter planting, and a moist day for spring and autumn planting. There can be no secret in the proper treatment of evergreens; if there were, I should say that it is in preventing their roots from becoming dry when out of the earth; to choose moist and cloudy weather for planting: and still better, if we had the power, by foresight or otherwise, to secure a continuance of such weather some time after they have been planted."

Mr. M'Nab disclaims any "title to originality" in planting evergreens in winter; and cites some cases, in the neighbourhood of Edinburgh, where it had been done by different persons, and with complete success. A considerable number of the evergreens in the new botanic garden were planted by Mr. M'Nab in the winter, "both in the dry part of the garden and in the wet part, and all have done equally well."

This is the essence of Mr. M'Nab's pamphlet; but there is a variety of relative matter, of considerable interest both to gardeners and nurserymen; something that is historically worth notice, and something that is amusing. Gardeners, in a district where peat earth is scarce, are directed to take as a substitute *equal parts of peat earth, pit sand, and vegetable mould, or old hot-bed dung;* or, if these cannot be got, *two parts of peat earth and one part of pit sand.* In either of these compositions, thoroughly incorporated, most kinds of American plants will grow and thrive perfectly. The same composition may either be used as a top-dressing for peat-earth borders; or, if too dear, the following composition may be substituted: —*Take one part vegetable mould, old hot-bed dung, or old tan, or a mixture of all three; one part pit sand, one part good garden earth,* and incorporate them thoroughly.

Nurserymen are presented with a list of hardy evergreens, a quantity of which they should always keep in pots, for sending to gardeners at a distance. Upwards of sixty species are enumerated, all of which, and a number of others, are constantly kept in pots by the London nurserymen.

As matter of history, we give the following extract: — "Much has been said of late about the ignorance of Scotch gardeners, particularly in a work written by Sir Henry Steuart, entitled *The Planter's Guide,* to which some one has written an answer, in a pamphlet under the title of *Strictures on Sir Henry Steuart's Planter's Guide,* by a Planter of some Experience. I think this defence of the profession, by the author of the *Strictures,* was unnecessary. Sir Henry is very unmeasured in his censure, but a libel is innocent when it is notoriously overcharged.

"I am somewhat interested in this controversy, in so far as Sir Henry has taken from me all the credit of our success in transplanting the trees from the old botanic garden, and transferred it to Dr. Graham. But this excites in me no degree of anger, because Sir Henry, at the same time, attributes this success chiefly to the circumstance of Dr. Graham's having, at his (Sir Henry's) suggestion, adopted the *previously unheard-of expedient* of cutting the roots round the plants some time before transplanting: though, before *The Planter's Guide* was written, I most distinctly recollect hearing Dr. Graham say, that he told Sir Henry that neither he (Dr. Graham) nor I claimed any merit for inventing what every schoolboy knew; and that, in point of fact, I had prepared the roots of a number of the transplanted trees in the spring of 1819, before Dr. Rutherford's death, and, consequently, before the present professor of botany had any thing to say in the matter. These statements Dr. Graham has made so often, both in his lectures and in private conversation, that I am sure they are generally known; and, therefore, an assertion that I was ignorant of this fact till I got my information, at second-hand, from Sir Henry, gives me no sort of uneasiness."

What is to us the amusing part of the publication is the following quotation from the calendarial index for April of the *Encyclopædia of Gardening*, and the comments upon it: — "Plant evergreen trees, as pine, fir, cedar of Lebanon, holly, and yew during the month, but finish planting deciduous sorts as early as possible. Wherever the plants are to be, or have been, long out of the ground, take good care to dry up their roots, by exposing them as much as you can to the sun and air; do not be nice in planting."

"I cannot but think," says our ingenuous-minded and excellent-hearted friend, "that these recommendations have, through inadvertency, been printed; because they are quite at variance with judicious instructions given elsewhere by the same author, and, as far as I am able to judge by my own experience, or from the dictates of obvious analogy, are opposed to every thing like successful practice."

Mr. M'Nab is not the only Scotch gardener who has considered the latter sentence taken from our work as meant to be literally understood; but we must confess that we are surprised beyond measure at this being the case, knowing, as we do, that both Mr. M'Nab and the gardener to whom we allude are well aware of our having been practically engaged in this and other branches of gardening. Other similar passages will be found in our calendarial index, especially in that of the first edition.

In conclusion, we can affirm this pamphlet to be well worth purchasing; and Mr. M'Nab deserves the best thanks of his profession, and of the arboricultural world, for having dispelled the prejudice which had arisen and taken root, both in books and practice.

Denson, John, senr.: A Peasant's Voice to Landowners, on the best means of benefiting Agricultural Labourers, and of reducing Poor-rates. 8vo, pamphlet, pp. 80. Cambridge and London, 1830. 2*s*. 6*d*.

We have incidentally mentioned this excellent pamphlet before, and regret that we have not earlier given it a direct notice. It is dear, but it contains a body of facts of great value, all deduced either from the actual experience or immediate observation of the author; and it is a work which every landowner, every justice of the peace, and every clergyman, as well as every one else who reflects on that momentous question, the disposal of our agricultural labourers, should read, and read with attention before he makes up his mind on this subject.

The reason why he should do this appears in the title itself, which, from perusing the body of the work, we find most apposite, expressive, and significant. It is the address of a peasant to landowners, on behalf of those of his own class, his fellow-peasants; showing how their privations and miseries have arisen from the factitious intervention of other men and other measures between the landowner and the land-tiller, and also that with landowners alone resides the power of correcting so unnatural, so distracting, and so alienating a course. Convinced of this, the author, with a tone of manly vigour, yet at the same time in the most respectful manner, raises his voice, and makes at once, at the fountain head, an appeal, as powerful as it is temperate, as impressive as it is judicious.

Lord Braybrooke, however, in a pamphlet which we have just received, and shall notice in a future number, is not quite of our opinion, but regrets that Denson does not write in a milder and more conciliating tone. "Nevertheless," says His Lordship, "I have met with no other publication in which the system of cottage allotments is so well treated, and upon this ground I recommend the work." — *R. S.*

AFRICA.

The South African Quarterly Journal. Nos. I. and II. 8vo. Oct. 1829 to April 1830. Cape Town, 1830.

We have great pleasure in noticing this publication, as an evidence of incipient improvement in a part of the world which, for some years past, has been considered as retrograding rather than otherwise. Most of the articles in the two Numbers which have been sent us belong to natural history rather than to gardening or agriculture; nevertheless there are some well drawn up papers by our correspondent Mr. Bowie, and a variety of extracts from European works on the same subjects. There is a sketch of the botany of South Africa, by Mr. Bowie, which we consider particularly interesting. His object is to direct the study of individuals to the study of indigenous botany; and, in doing this, he mentions the difficulty "in the selection of species from the number of plants with which we are surrounded." He prefaces a list of plants generally flowering in the months of December, January, February, and March, in the Cape district, with the following remarks:—"The Amaryll*ídeæ* of the colony, connecting that tribe of the bulbous productions of South America, Asia, and Europe with those of Africa, are striking features in the botany of the Cape during the months specified. Of this tribe, however, the most beautiful and interesting kinds are not found in the Cape district, nor have many from the more distant parts of the colony as yet been introduced to the flower-gardens of the Cape; and even those cultivated flower but sparingly, owing to the treatment they receive. The prevailing droughts during the months of December, January, February, and March materially affect the vegetable productions, especially those on the lower grounds: it is in such seasons that the productions of the mountains shine forth in their most splendid array; and we frequently meet with several plants in flower at great heights, which are equally flourishing in other months on the lower grounds. The trees and shrubs of the Cape are generally perfecting their seeds during the summer months; still, however, there are several in blossom during that period, as their proper season.

"Among the *E*ríceæ, some species produce a succession of flowers for several months, rendering them great and desirable ornaments for the flower-garden.

"Of the Prote*àceæ*, several species succeed each other in flower so rapidly, that one or other of the tribe may be found in perfection at all seasons.

"Specimens of the *I*rídeæ are more or less to be met with in every month of the year; though the general season is the months of August, September, and October. Many fine species of this family, flowering at an earlier season, are overlooked."

The list contains *P*olygàleæ, 3 sp.; Caryophýlleæ, 2 sp.; *R*hámneæ, 4 sp.; *C*elastríne, 4 sp.; Leguminòsæ, 10 sp.; *R*osàceæ, 4 sp.; *O*nagràriæ, 1 sp.; *C*ucurbitàceæ, 4 sp.; *F*icoïdeæ, 2 sp.; Umbellíferæ, 6 sp.; Araliàceæ, 1 sp.; Loràntheæ, 3 sp.; *D*ipsàceæ, 4 sp.; Compósitæ, 25 sp.; Lobel*iàceæ*, 5 sp.; Campanulàceæ, 3 sp.; *E*ríceæ, 24 sp.; *G*en*tiàneæ*, 2 sp.; *S*esàmeæ, 1 sp.; Scrophulárinæ, 3 sp.; Labiàtæ, 4 sp.; *V*erbenàceæ, 5 sp.; *O*robanchèæ, 4 sp.; Lentibulàriæ, 1 sp.; *P*lumbagíneæ, 4 sp.; Chenopòdeæ, 2 sp.; *Santalàceæ*, 4 sp.; *E*uphorb*iàceæ*, 4 sp.; *U*rtíceæ, 1 sp.; *M*yríceæ, 4 sp.; *O*rchídeæ, 6 sp.; *I*rídeæ, 8 sp.; Amaryl*lídeæ*, 18 sp.; *H*emerocallídeæ, 5 sp.; *A*sphodèleæ, 28 sp.

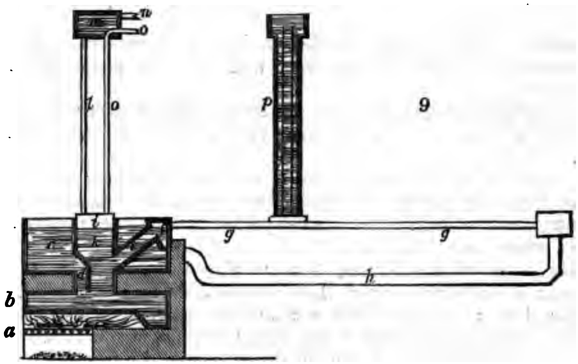
We shall notice the gardening part of this journal more at length on some future occasion; and its natural history will be examined in our Magazine devoted to that branch of science.

PART III.

MISCELLANEOUS INTELLIGENCE.

ART. I. *General Notices.*

WEEKES's Mode of heating by hot Water.—Mr. Weekes has taken out a patent for his improvements "in raising, lowering, or conveying heated water;" and the following is an extract from the specification, as given in *Newton's Journal.* Mr. Weekes founds his claim of invention on the four following particulars: — "First, in applying a cistern to the boiler for the purpose of supplying it with water, without making that cistern a part of the boiler, but only connected thereto by a tube; secondly, in a method of raising heated water to any required height, for the purpose of warming the upper parts of the building, without employing pumps or siphons; thirdly, in the employment of a large ascending pipe, with a smaller returning pipe within it, which shall convey the water after it has parted with a portion of its heat, at an elevated situation, back again to the cistern, and thence into the boiler; and, fourthly, in the adaptation of smaller pipes for conducting the heated water to any particular part of the building, while main pipes or tubes may be closed, and out of action. These several improvements are set out in a drawing (*fig.* 9.), which represents the apparatus partly in section; *a* is the furnace; *b*, the boiler; *c*, the cistern for supplying the boiler, from which the water passes through the tube *d*; the heated water rises from the boiler through an inclined tube *e*, into a chamber *f*, and thence passes along the flat tube *g g*. This tube (*g*) is proposed to be 2 or 3 ft. broad, and only a few inches deep, in order that its upper surface may send up as much heat as possible; at the end of the tube *g* there is a receptacle into which the water is discharged, and thence it passes by the *lower tube* (*h*) back to the cistern (*c*), and descends again through the



tube *d* to the boiler; thus producing a continued current of hot water through the heating tube *g*. In order to raise the heated water to a higher level, a close box (*i*) is affixed to a square chamber (*k*) above the boiler, from which box the water ascends by the pipe *l* into a receiver (*m*) at the top, and thence flows by the pipe or tube *n* round the building to be heated in the same way as through the tube *g* already described, and, having performed its circuit, descends by the pipe *o o* into the cistern. Such is the plan proposed by the patentee; but the principle upon which the water is said to rise in the pipe *l* rather than the pipe *o* does not appear. The third feature of the invention is shown at *p*, where a large pipe is intended to carry up the heated water from a close vessel similar to *i*, inserted into the tube *g*; and within this large pipe is a smaller one for bringing down the water again. The fourth suggestion is, to adapt small pipes, passing alongside of the tube *g*, and branching off, if necessary, to the sides, in order to convey the heated water into other parts of the building. These may be employed when there is but little fire in the furnace, and, consequently, but a small quantity of heated water will be put in circulation: to employ these small tubes in the way proposed, it will be necessary to close the entrance tube *g*, and also the exit of the tube *h*, in order to prevent the circulation going on in those tubes." (*Newton's Journal*, May, 1830.)

Heating and ventilating Hot-houses.— There is a paper on this subject by George Knowles of Ripon, in *Newton's Journal* for June, in which a claim is made for novelty in accomplishing the object without either "cistern, return pipe or pipes, or water retained upon the top of them for producing vapour; and a general tone of pretension assumed, which, to say the least of it, invites to criticism." The present plans, the writer goes on to say, "are far, very far, from being the best that the system of heating hot-houses by boiling water is capable of being reduced to." This may be the case; but, we confess, we cannot discover a single step in advance indicated in the paper before us, either in heating or ventilating; Mr. Cottam having, in repeated instances, employed only one pipe, and Messrs. Bailey having moved shutters by machinery in the wall of a stove opening into the back shed, at Knowle, in Kent, in 1819. (See also Vol. III. p. 305.) Mr. Knowles uses the expression boiling water; but, to heat with economy of fuel, the water should not be raised high, but made to circulate with rapidity. Kewley's plan (Vol. VI. p. 377.) is admirable in this respect. At Mr. Colville's, the water in the boiler is never hotter than to admit of holding the hand in it, though the hot-house is raised to 70°; the difference between the temperature of the air and the water is probably not more than 20°. Such are the advantages of a rapid circulation. A very little reflection will convince any one that, where water is made to boil, there must be a much greater waste of heat by the chimney or flue than where it is only raised to 90° or 100°. Mr. Knowles proposes to have openings in his pipe to admit vapour at pleasure. This is neither new nor of much consequence: every gardener knows that if he has once got heat he can easily produce steam; and it is much cheaper to raise steam by syringing the house, and watering the floor, than to boil water in order to obtain steam. But lest Mr. Knowles, whom we had the pleasure of seeing here about a year ago, should think that we are not doing him justice, we shall let him speak for himself:—

"The boiler may be of the usual size and form, suitable to the extent of space intended to be measured by the fire-flue and boiling water; but it must have its top firmly covered, and in the cover a slight self-acting valve, very easily worked, that a little steam may be retained upon the surface of the water, which gives a quicker motion to the water flowing through the pipe; I say pipe, for I have only one pipe in the whole apparatus. The upper aperture in the boiler to be placed 6 in. below the top; and from this point begins the pipe, of 6 in. bore, laid perfectly level, which will convey the water in any direction whatever, and to every part of the house, if desired; and the returning end of this pipe may be thrown into any part of the boiler near the bottom, say 12 in. below the upper aperture; which 12 in. of fall, it is scarcely necessary to observe, must be given by an elbow in the pipe; and this elbow may be placed in any part of its course, providing that the architect carefully observes to increase the length of the vertical tubes, hereafter described, should he place any between the elbow and the boiler, in the returning end of the pipe; that is to say, he must, in all cases, make those tubes as high as the top of the boiler.

"The pipe may be composed of castings, either flat, square, or round (say in 4 ft. lengths), with an aperture in each, or every other casting, of the same size as the bore of the pipe, or any less aperture, if preferred, with a tube, standing as much above the top of the pipe as the top of the pipe is below that of the boiler, to prevent the water from running over. These apertures give air and motion to the water, and serve, at the same time, to admit any quantity of vapour into every part of the house.

"Should the gardener wish, at any time, to give the vines a good steaming, by entirely filling the house with vapour, the above plan is well calculated for doing it; and requires nothing more than stopping the supply of water to the boiler, and reducing the surface of water to 2 or 3 in. below the upper aperture in the boiler. He may steam in any way, or in any part of the house he pleases, by keeping such vapour-tubes open or shut as it best suits his purpose." (*Newton's Journal* for June, p. 125.)

Oil as a Substitute for Putty between the Laps of Panes of Glass. — Sir, A writer in the last Number of your Magazine, I observe, wants a remedy for the cracking of glass in lap-glazed roofs. Puttying is the old and an effectual mode, but it looks very ill. In a large conservatory which I am at present erecting for myself I am about to fill the laps with a transparent drying oil, put in with a large camel's hair pencil; which will be held by capillary attraction, while it remains fluid in the same way as the water is which, being frozen, causes the fracture. But the oil will speedily become solid, and will fill up the lap as well if not better than putty; and it will never be known, on mere inspection, whether they are filled at all or not. It is obvious that this operation must be performed when the glass is perfectly dry. I am, Sir, yours, &c. — *Robert Mallet. Ryder Row, Dublin, Sept.* 23. 1830.

Siebe's new-invented Self-pressure Cock. (*fig.* 10.) — This cock is of a construction different from any hitherto offered to the public, and com-

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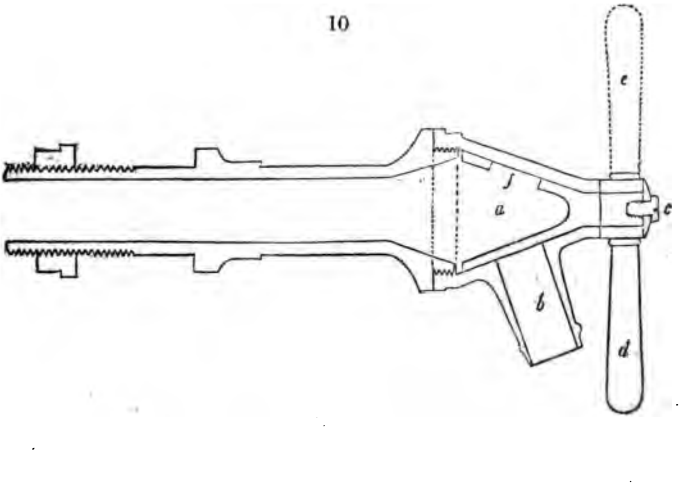
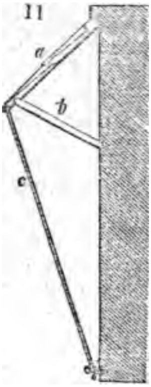


bines the following requisites, viz. security against leakage, simplicity of construction, and great durability. It can be taken to pieces, to clean or repair, without removing the shank from the boiler or cistern, which, with the common cock, is at all times inconvenient, and frequently very expensive. The plug (*a*) being a hollow cone, the sediment from the boiler or cistern rests inside the cone instead of against the wearing part of the plug (as with the common cock); and, immediately on opening the waterway (*b*), it is washed through without injuring the barrel or plug. As the water is constantly pressing on the inside of the cone or plug, consequently the greater the pressure from the boiler or cistern, the tighter the cock holds; which is the reverse with all other cocks. This conical plug is not liable to stick fast, as it gives way to the expansion of the metal occasioned by heat. As the plug wears so it tightens; and, having but one opening, it has a greater lock than those in common use. The screw in front (*c*) is for the purpose of adjustment when the plug turns too easily. The water flows on lifting up the handle (*d*) to the position shown by the dotted lines (*e*), which brings the two openings (*b* and *f*) in contact. Those improved cocks are made, by the inventor, of the best gun metal, and not of the common pot metal (which contains a large proportion of lead), and are sold at prices varying from 9*s.* to 1*l.* 1*s.* We have adopted one of these cocks in a boiler for heating our house by hot water; and they are also employed by Walker, Cottam, and some other engineers. We strongly recommend them to all gardeners who have any thing to do with hot-water or steam boilers, or, indeed, with large cisterns or vessels of any kind which require to be occasionally emptied. Where these cocks are sold (145. High Holborn) may also be seen the excellent self-acting water-closet of Downes, already recommended (Vol. V. p. 545.) as by far the best machine of its kind. — *Cond.* *Nov.* 25. 1830.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The Protection of the Blossom of Fruit Trees against Walls from rains and frosts, by means of projecting boards, has been suggested in a paper, which we regret not to have room for, by T. B. After noticing the injuries to which bloom is liable from sudden storms of rain, he says, " a couple of feather-edged boards may be nailed together, so as to form a surface of 2 ft. in width. These boards may be projected from the top of the wall, at an angle of 45° (*fig.* 11. *a*), supported by strutts abutting against the wall (*b*), and held in their place, to keep them from being blown away by wind, by two strings, one at each end of the board (*c*), which may be tied to staples driven into the bottom of the wall." — *T. B.* *April* 3. 1830.

Straw Protectors for preserving Fruit Trees from the Frost. — Sir, I take the liberty of sending you one of the straw mats (*fig.* 12.) which I make for protecting my fruit trees from the frost in spring. Should you think proper to use it, or make it public, I should be very happy to show you how I construct them. I have always used them with the greatest success, and have thus insured a crop of wall fruit every year, particularly of peaches and nectarines, without the danger of breaking off the young shoots in their removal, as is the case with nets. I let the mats remain as long as the frost continues, and then remove them without injuring the trees. I am, Sir, yours, &c. — *René Langelier.* *Acton Lodge*, *Sept.* 8. 1830.

It will easily be understood from the figure that this straw protector consists of small handfuls, averaging not more than two or three dozen of straws each, tied together at the root end, and suspended from the wall, beginning at the bottom; so that the ears of one range of protectors will always overlap the *root ends of the other* range, in the manner of thatch.

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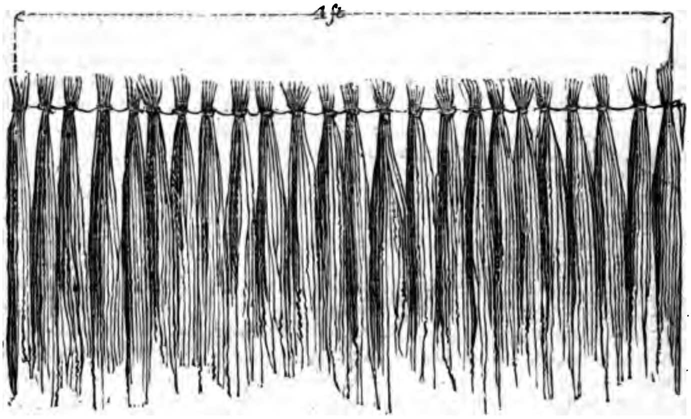

This mode of protecting trees is a good deal in use both in France and Germany, and has the recommendation of being cheap. M. Langelier finds it remarkably so; and we hope he will have many imitators. — *Cond.*

The Under-foot Spade. — Sir, Neither amongst the different tools noticed by you in this Magazine (Vol. V. p. 652.), nor any where else, do I recollect to have seen described an instrument which we call the under-foot spade; and I cannot say that I have seen it used generally elsewhere, although common here; and as many of your subscribers may not be acquainted either with it or its uses, I will, with the help of an outline, endeavour to give such a description as may be followed. This spade (*fig.* 13.) should be made very strong, the shaft square, with the angles rounded off, and strongly plated over the handle; the blade about 14 in. across and 12 in. deep, and perpendicular, with the edges cutting sharp; and a piece of iron riveted on for the feet (*a*). For the stubbing of hedges, taking the top sods off drains, and various uses where strength is wanted, this spade will be found a most powerful instrument. I remain, Sir, &c. — *C. P. York, June* 19. 1830.

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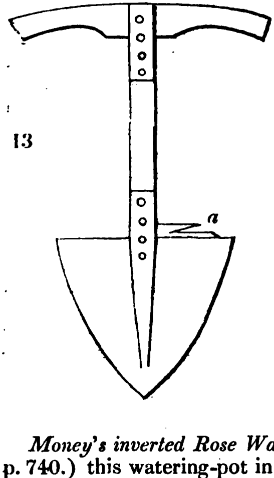

Money's inverted Rose Watering-pot.—We have already noticed (Vol. V. p. 740.) this watering-pot in its simpler state, and have now to describe it as a finished and more perfect utensil. The improvement consists in having the spout made in three distinct parts. The first (*fig.* 14. *a*) is fixed to the body of the pot, and in such a manner as not to go easily out of repair, by filling up the angle with the hollow compartment (*b*), in the top of which are two openings (*c d*) for containing — the larger (*c*), the middle piece of the spout, or the larger rose; and the smaller, the smaller rose. The larger rose (*e*) is for using without the middle piece of the spout, and it delivers the water upwards, as in the figure (Vol. V. p. 740. fig. 176.) before described; the smaller rose (*f*), which can only be used with the *middle tube of* the spout, delivers the water direct downwards, exactly

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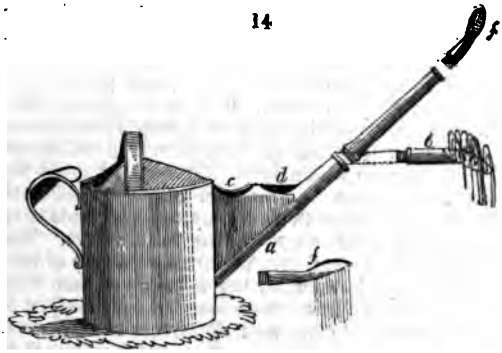

over the object or space to be watered. The advantage of this rose, therefore, consists in the definiteness of its action, as the advantage of the other consists in the gentleness of its action. An additional value is given to this part by the screw-joints, which render it perfectly water-tight; and, therefore, among other uses, peculiarly fit for lady gardeners. For the purposes of those who have delicate seeds to raise, or small cuttings or plants to water, we consider Money's inverted rose-pot a valuable addition to the more refined utensils of gardening. It is manufactured by Thompson of Oxford Street; and may be ordered through Mr. Money, Mr. Charlwood, the Bedford Conservatories, or any seedsman or seed-shop. — *Cond.*

Prevention of the Mildew on Peach and Nectarine Trees. — Sir, The following preventive of the mildew on peach and nectarine trees has simplicity, as well as the experience of many years, to recommend it: — Take of sulphur and rain or river water, in proportions of 2 oz. of sulphur to every 4 gallons of water. Put the quantity which may be required into a copper or boiler, and let it (after it commences boiling) boil for half an hour; after which it may be taken out, or suffered to remain until it becomes of a tepid state, when it ought to be applied to the trees by means of the garden engine or syringe, as in a common washing with water. The time for applying it is annually, as soon as the fruit is set and considered out of danger. I am, Sir, yours, &c. — *A Constant Reader and Subscriber. Dec.* 28. 1830.

To destroy the Grub at the Root of Cauliflowers, &c. — Sir, I venture to give you my observations and proof of the benefit of soot being applied to the stems of cauliflowers and cabbages, in case of the grub at the root, a small handful to each, and earthing them immediately. In the month of May, 1829, my plants were all going off by the grub, which had totally destroyed the lower part of the root; but by this application they threw out fresh fibres, which very much astonished me, and the plants grew more rapidly, and made very fine heads. I also practised it in 1830 with equal success. — *W. Mathers, Gardener to Lady Palmer. Wanlip Hall, near Leicester, Nov.* 2.

Will the Melon mule with the Gourd?—The hybrid melon which I now send you was grown from seed obtained from a melon we have here under the name of the smooth green Spanish melon, impregnated artificially with the Cucúrbita verrucòsa and Cùcumis *Mèlo*, var. *Succàda*. The result has been that these plants, which were raised from this seed, have all produced strange and different hybrids, and have all fruited very shyly, only one fruit having set on each, one of which I send you; and as I have not a second, I shall be obliged by your returning me a little of the seed, and letting me know whether the fruit has any flavour or not. — *Robert Mallet. Ryder Row, Dublin, Sept.* 23. 1830.

The melon was received on the evening of October 2., and was so far decayed as not to admit of being tasted; but, as the succada melon was used as well as the Cucúrbita, it is much more likely that the former produced the effect, and that the cross was between two melons. The seeds we saved, and have sent a few to Mr. Mallet, and given the rest to Mr. Charlwood for distribution. — *Cond.*

Láthyrus suavèolens [?]. — I received the seeds of the species of *Láthyrus* herewith sent from the south of Europe, under the name of *L.* suavèolens. I am of opinion that it will be a valuable agricultural plant, either as feed or hay. In rich soils I fear it would grow too luxuriant, and perhaps too hard or woody to make a good sample of hay. It is in the poorest soils that I fancy it would prosper most; and in such soils it would be the more desirable. It appears to contain a very great quantity of sugar; and horses, cows, and donkeys eat it while green with avidity. The little I dried the latter seem very fond of. Perhaps the best mode of culture would be to sow the seeds in a small patch; and when they came up, and the plants were sufficiently strong, they might be planted out in lines in the fields. The first season, under ordinary circumstances, they would afford a crop of hay, if not hay, at least rich pasturage in autumn, the following season they would yield a heavy crop; and, in addition to its saccharine properties, it seeds so abundantly that it cannot fail of being rich provender for horses, &c. I have given some of it to Mr. Atkinson, to plant on the poor soil at Silvermere, where I shall have the opportunity of seeing its progress. Perhaps you may think it worth distributing to some of your agricultural friends, whose observations will either confirm or refute my opinion of it. The result I shall be glad to learn. — *Charles Mackintosh. Claremont Gardens, Dec.* 7. 1830. [Sent to Mr. Charlwood for distribution. — *Cond.*]

Field Turnips as treated by Agronome. — The first, second, or third week in October pull up every turnip in the farm, whether they have done growing or not: if they have not, all the better. Lay them carefully across the top of the ridges or drills; let them remain in this state a week or a fortnight before cutting off the tops and tails. The grand advantage of this leaving on the tops is, that the roots become doubly nutritious, as well as doubly durable. A gardener can understand all this from saving his bulbs, from taking up his potatoes while the stems are yet growing, and from gathering his keeping fruit before it is fully ripe. — *Agronome. Near Cheadle, Staffordshire, Oct.* 28. 1830. (*Country Times,* Nov. 1. 1830.)

ART. II. *Foreign Notices.*

FRANCE.

TOURS, Jan. 1. 1831. — You will, perhaps, on seeing the date of this, think I have chosen oddly in writing to you on the subject of the gardens of this neighbourhood at this time; but it is precisely because *it is* the season of mid-winter that I now employ my pen on that subject: were I to wait till I may have more, and better worth, to send you, I fear I might forget some particulars at a future time which are now constantly under my eye; and which, at any rate, I may now describe in more faithful and more vivid colours than when the present appearances are superseded by others still more interesting in the spring. The situation of this city, between the rivers Loire and Cher, and the abruptness with which "the vine-covered hills" on the right bank of the former river rise close on its fauxbourg Symphorien, nearly confine the gardens, cultivated mainly for the supply of the population of Tours (or the market-gardens, as we should call them), to the east, the south, and the west sides of the city. The land between the Loire and the Cher is alluvion of the first quality, except in places where the erratic wanderings of the latter river, at a period when not so effectually confined within its banks as at present, have made new channels for itself, and deposited sand in those it had left, or spread it over the adjacent levels. Every where close up to the ramparts of the city, in uninterrupted succession, there are either nurserymen's grounds or market-gardens, and the latter extend outward in some places to a very considerable distance; most of these are small, and are, *for the greatest part, cultivated by the proprietors*. It is of the present appearance of these that I wish to give you a short description. Divided from each other by a treillage of vines, or more commonly without any division at all, the vast tracts of land covered at this moment with the unequivocal marks of the most luxurious vegetation astonish and delight the eye familiarised only to the productions of a northerly climate. I have viewed with pride and pleasure the effects of the skill and industry of my countrymen in the neighbourhood of London; but never did I any where before see (at this season of the year, be it always remembered) gardens so completely covered with green crops, and those so uniformly of the richest and deepest hue. Viewed across the rows, and at a little distance, the whole surface of the country thus occupied presents to the eye one unvaried carpet of the most beautiful verdure: and yet we have had some sharp frosts and heavy falls of snow within the last month. A considerable quantity of ice has floated down the Loire in small masses; and, within these few days past, ice, fully an inch thick, has been brought from the country for the confectioners' use, the thermometer being on two nights as low as 18° of Fahrenheit.

The vegetables under cultivation at present are, with the exception of a few seedling plants, for winter and spring use; and the ground, as fast as the present crop is taken to market, is again and immediately stocked with those which are to succeed them: so that the number of crops produced from the same land in the course of the year is truly surprising, at least to a person accustomed only to observe the course of cropping even in well managed gentlemen's gardens. The variety of plants cultivated for salads, for which there is so much demand in France, certainly cut a conspicuous figure amongst the present crops of vegetables; the endive, of which they eat great quantities, not being blanched, as is customary in our gardens. The quantities of vegetables of large size and excellent quality thus raised is very great; and the prices consequently so low, that the consumers of all classes within the city (the present population of which, according to a return published a few days ago, amounts to 21,928 souls) purchase instead of rearing their own vegetables, though there are many and considerable pleasure and even nursery gardens in different quarters of the town. The very striking difference between the appearance of the common market-gardens here and those of any provincial town or city in England cannot for a moment, I conceive, be attributed to the superior knowledge or greater skill of the French over our own gardeners. The soil, a rich sandy loam of great depth, and the climate, notwithstanding the severe cold which, as above quoted, it will be seen is sometimes felt here, have each, I suspect, much to do in this business; and the occupiers are for by far the greatest part placed under the following circumstances differently to our market-gardeners in England, the effects of which I shall leave your readers to judge of for themselves: —

And first, and before and above all, the French are proprietors of the land they occupy: they and their families, all of whom according to the French laws of succession are interested at present or in reversion in the property, cultivate the land; and with what industry and hearty good will, a person need but to be a spectator in order to become a competent judge. Secondly, in comparison with ours, their taxes are light; though injuriously increased in consequence of the wars of Bonaparte, and the profligate and corrupt expenditure of the public money since the restoration of the now ex-Bourbons. Thirdly, they have no church, or highway, or poor rates to pay; and, above all, they are emancipated from the grievous burden and oppression of tithes. Most if not all the land occupied as above described, previously to the Revolution of 1789, belonged either to the archbishopric of Tours, or formed part of the *domain* attached to the celebrated Château de Plessis, the remembrance of some part of the history and horrors of which Sir Walter Scott has revived in his well known novel of *Quentin Durward*. The former had been despotically wrested from the possession of the no less celebrated Abbey of Marmoutier, in the year 1740, and added to the already enormous possessions of the see of Tours. In consequence of the Revolution of 1789 the government resumed both, as belonging of right to the nation; and the whole was sold out in small lots, and for payment by easy instalments, to those who chose to purchase.

This measure originated the great numbers of small proprietors in France (said to amount to two millions of persons), which the present laws of descent have certainly no tendency to diminish. Many of these properties, though situated, of course, at greater distances from Tours, contribute materially, in some respects, to the subsistence of that city; and particularly in the supply of several excellent varieties of beans or lentils, commonly called haricôts, the cultivation of which is so much attended to in this country, and so little in England; and of the potato, which is grown in very large quantities, and of excellent quality. For the general introduction of this root into this neighbourhood, at least, and for the capital sorts which they now possess, the natives are indebted chiefly to our countrymen, many of whom have so long resided amongst them. Turnips also begin to be cultivated; and, when dressed for the table, are not inferior in quality to those grown in England. The lands on which these three sorts of vegetables are grown are made to produce winter vetches in the intervals; and in the courses of their crops wheat is not forgotten, the produce of which at harvest time, if at all in proportion to the present appearance of the young plants, must be very great. Most of these crops are the produce of spade culture, which is adopted to a great extent in the rich lands near the city. Fifty or a hundred persons are to be seen together at times, in different portions of the flat lands, the proprietors and families of adjoining spots, all working with their spades, and not unfrequently shouting in unison the Parisienne. Yesterday and the day before, in my morning rides, I saw many of these persons thus employed, whilst others were carrying earth in baskets on their backs, across land too tender to bear a wheel of any description, to fill up holes, and to raise the ground into beds for cultivation, which would have been otherwise too wet and low. This was in the immediate neighbourhood, and partly within the boundary of the park wall of Plessy, a considerable length of which still remains; though of the castle itself nothing is left but a single tower, to mark where once stood that horrible fortress and favourite residence of Louis XI. of France, which for so long a space of time spread terror and dismay throughout the surrounding country. And, thank Heaven! where "every yard of ground around," except the "permitted path" itself, was formerly "rendered dangerous, and well nigh unpracticable, by snares and traps, armed with scythe-blades, which shred off the unwary passenger's limb as sheerly as a hedge-bill lops a hawthorn sprig; and where *were* calthropes that would pierce your foot through, and pitfalls deep enough to bury you in for ever," *— *now*, women and children walk to and fro in perfect safety; and with a proud feeling of reconquered rights, and conscious property, the men of Touraine cultivate their *own* land. — *John H. Moggridge.*

GERMANY.

Prussian Horticultural Society. — At the Eighty-ninth Meeting of this Society, held on the 12th of September, 1830, the following papers were reported: —

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* Quentin Durward.

A letter from the Royal Swedish Academy of Agriculture at Stockholm, which, in communicating the *Transactions* of the academy published up to that time, announced its readiness to form a closer connection with the Society, in order to effect, in common, the object of both.

A letter of the same purport from the Westphalian Society for cultivation, established at Minden.

A treatise by Burgomaster Borggreve, of Bevergern, upon the ravages of the larvæ of the cabbage gnat (*T*ìpula oleràcea), and more especially of a fly (Anthomỳia bràssicæ) which frequents plants of the cabbage genus, particularly the cauliflower, and the means of prevention. For this purpose, the author, after careful experiments, recommends, among other things, the sifting of a mixture consisting of two thirds soot and one third earth over the seed; the sowing of the cauliflower on a bed which had been thickly covered in the preceding autumn with dill; the encircling, on transplanting, as soon as the plant begins to shoot up, the upper part of the root with a coat of well kneaded loam; the planting deeply, to the head, and surrounding the plant with moss, heaping up the earth around it. Here Borggreve also confirms, by experience, the good effect of sprinkling pulverised charcoal over beds destined for onion seed. The mixing of charcoal powder with the superficial mould, to protect bulbous roots against the larvæ of a fly (Anthomỳia cepàrum), has already been recommended in the *Transactions* of the Society.

Further remarks by the gardener to the Institute, Bouché, upon the destruction of tulip bulbs by a fungus (Scleròtium *Tulipàrum* Schedl.), from which they may, in some measure, be preserved by filling up the beds with fresh earth, and by transplanting the tulips to other beds.

Communications from Professor von Schlechtendal, consisting of extracts from the interesting work of Dr. Göppert, which is now published at Breslau, upon the developement of heat in plants, their freezing, and the means of protecting them; also, a highly interesting description of the botanical gardens at Palermo, from a recent number of the *Ratisbon Botanical Journal.*

Herr Otto, garden director, has given an account of the Arbor Vitæ (*T*hùja occidentàlis) in Heidelberg, which is 212 years old. He has also supplied historical communications upon the increase of the collections of palms on the continent of Europe within the last ten years. According to his account, it appears that the royal botanic garden of Berlin, which, twelve years ago, could not boast of more than 3 or 4 species of palms, now contains 62; and, including the *C*ycàdeæ, about 80 species. To these must be joined, as a valuable acquisition to science, the 48 examples of rare kinds brought from the royal collection of Paris to Peacock Island, of which 18 new species are destined for Berlin. Herr Otto, referring to what he had repeatedly observed during his late visit to Paris, has made some appropriate remarks upon the extraordinarily low price of plants exposed for sale in the flower-market of Paris, which are still rather rare with us, such as the Ixòr*a* coccínea, the different species of Lantàna, *C*ìtrus *m*yrtifòlia, and the newest Pelargònia. He has likewise given further information on the celebrated peach gardens at Montmirail, the espalier walls of which, if in one row, would extend to the distance of several miles; on the large and not less celebrated cherry and strawberry grounds at Montmorency; on the great abundance of all kinds of trees and shrubs in the nursery gardens of Paris; and on M. Boursoult's curious collections of palms, araucarias, and magnolias there. Herr Otto, besides, explained by manipulation the method, usually as easy as successful, employed in the magnificent garden of M. Soulange-Bodin at Fromont, for propagating camellias, azaleas, and pæonies, &c., by herbaceous grafting.

Of the various plants and fruits introduced for inspection, or for ornamenting the place in which this Meeting was held, the following, among others, were worthy of remark: — Two large samples of *Cl*èthra arbòrea, a new Bilbér*gia*, Nicoti*àna* alàta, a select collection of various kinds of fuchsias (some of them new), *H*edýchium coccíneum and Gardneri*ànum*, Beaufór*tia* decussàta, a skilfully arranged collection of flowers of rare varieties of Georgì*na*, three remarkable pine-apples, diamond grapes of uncommon sweetness, various kinds of plums and melons.

Models were exhibited of a very efficient instrument for facilitating the gathering of potatoes, invented by a watchmaker of Stolpe, named Gerdum, accompanied by a comprehensive description and a print, published by the inventor. A wish was expressed that trials of the instrument might be made by farmers and agricultural societies, and the results of the experiments communicated. — *G. R. Nov.* 11. 1830.

ASIA.

General Improvement. — The Governor-General invites the communication of all suggestions tending to promote any branch of national industry, to improve the commercial intercourse by land and water, to amend any defects in the existing establishments, to encourage the diffusion of education and useful knowledge, and to advance the general prosperity and happiness of the British empire in India. This invitation is addressed to all native gentlemen, landholders, merchants, and others; to all Europeans, both in and out of the service, including that useful and respectable body the indigo planters, who, from their uninterrupted residence in the Mofussil, have peculiar opportunities of forming an opinion upon some of these subjects. Communications to be addressed to the private or military secretary of the Governor-General. By command. *A. Dobbs, Private Secretary. Government House, Feb.* 23. 1829. (*Times*, Aug. 1.)

We addressed a letter to Mr. Dobbs (dated Aug. 1. 1829), recommending a national establishment for the education of the children of all ranks, from infancy to the age of puberty, accompanied by a copy of our pamphlet *Des Etablissemens pour l'Education Publique*, &c., and Nos. V. and VI. of the *Magazine of Natural History*, and No. XVIII. of the *Gardener's Magazine*. We subsequently sent to the India House, for Mr. Dobbs, "Parochial Institutions; or, an Outline of a Plan for a National Education Establishment, suitable to the Children of all Ranks, from Infancy to the Age of Puberty; as a Substitute for the National Churches of England, Scotland, and Ireland." Of this pamphlet only one hundred were printed, which were given away. — *Cond.*

English Language. — The introduction of the English language, and of a national system of education, in British India, are among the important public objects enlarged on by Mr. Buckingham in his popular lectures on that country. Among the results which he proposes to obtain are, the exercise of public opinion on public men, the augmented consumption of English goods, the employment for our surplus educated classes, and an improved race of colonial offspring to perpetuate the British name. —*Cond.*

The Botanic Garden at Singapore, established by the government, is proceeding most satisfactorily, and the clove trees are in a thriving state. (*Singapore Newsp.*, Jan. 11. 1829.)

The Tarfa or Tamarisk Trees (*T*àmarix *Lin.*) delight particularly in sand; and, in the driest season, when all vegetation around them is withered, never lose their verdure. This tree is one of the most common productions of the Arabian Desert, from the Euphrates to Mecca, and is also frequent in the Nubian deserts; its young leaves form an excellent food for camels. (*Burckhardt's Travels.*)

Cultivation in Arabia. — "Although the Arabs cultivate the ground, they do not hold it in any fixed occupancy. The whole region is one immense common, over which the different tribes are in continual motion. When they come, at the rainy season, to a favourable spot, they sow it, wait about three months for its growth, reap the harvest, and proceed onward. The Fellahs, or fixed cultivators, are the objects of their most profound contempt, and an alliance with them is considered as involving the deepest ignominy." (*Ed. Rev.*, Sept. 1828.)

AFRICA.

Ancient Agriculture and Horticulture. — M. Champollion, now in Egypt, has sent home a number of drawings, copied from the tombs. Among these are the following: — Tilling the ground with oxen, or by hand; sowing; treading the ground by rams, and not by hogs, as Herodotus says; five sorts of ploughs; the use of the pickaxe; the reaping of wheat; the gathering of flax; the putting these two kinds of plants into sheaves; the carrying to the mill, the threshing, measuring, storing in the granaries; two drawings of large granaries on different plans; the flax carried by asses; a number of other agricultural operations, among them the gathering of the lotus, the culture of the vine; the vintage, its carrying home; two presses, one worked by the hand, and the other by mechanism; the putting the wine into bottles or jars, carrying it to the cellar, &c. &c. Horticulture: the gathering of figs, &c.; cultivation of the onion, irrigation, &c. The whole with explanatory hieroglyphic inscriptions: also, the intendant of the country-house, the secretaries, &c. (*Le Globe.*)

WEST INDIES.

Bath Gardens, Jamaica, St. Thomas in the East, Oct. 1. 1830. — The curator, wishing anxiously to improve the state of the botanic gardens of the Bath of St. Thomas the Apostle, will be most grateful to all those public-spirited persons and botanical amateurs who will favour him with new or rare plants or seeds, &c.; and he will always readily supply such other plants in exchange as the gardens possess, which can be spared. Any thing addressed to the care of the Jamaica Society, Kingston; Messrs. E. Taylor and Co., Morant Bay; or Samuel Wyndowe, Esq., Port Morant, on due advice, will meet every attention and punctual return. The object is to make these gardens a kind of central depôt between the old and new worlds, for many of the articles of commerce, for which we now pay great prices; but which might not only be produced, but grown to such an extent as to admit of their exportation. Possessing hills and valleys of different temperatures, from 50° to 100°, plants coming from almost every country in the world may be grown to perfection in this island. Trusting our objects will meet with your approbation, I remain, Sir, &c. — *Thomas Higson.*

AUSTRALIA.

New Zealand. —We lately (Vol. VI. p. 486.) made some observations on the eligibility of this island as a fitter place for emigration than Sydney or the Swan River; and we are happy to find our observations more than confirmed by a paper in the *Morning Chronicle* of October 23. 1830. New Zealand is there stated to be more an agricultural than a pastoral country. The climate is said to be temperate, the surface hilly, with numerous abrupt ridges abounding in fine timber, and a series of the richest valleys, producing Indian corn and wheat, without a risk of failure from either cold or hot blighting winds. Potatoes, carrots, turnips, and every other species of culinary vegetable, the missionaries found to grow as luxuriantly as in Britain. " The Church of England missionaries, all men of liberal education, speak in raptures of the scenery, the climate, the productiveness of the soil, and of the mental capabilities of its yet rude inhabitants;" and they declare that all that is wanting to render the island highly civilised and flourishing is the establishment of a regular government by some civilised power, and the diffusion of education. (See the excellent article in the

Chronicle above alluded to, and the work of Mr. Earl, now in course of publication.) — *Cond.*

Fruit Trees sent to Van Dieman's Land. — Among the goods brought out by the Wave, for the Van Dieman's Land Company, we have much pleasure in observing a very excellent assortment of fruit trees of all kinds. Capt. Lister must have taken unwearied pains in attending to them during the voyage, as almost every one is alive, with the exception of the strawberry and raspberry bushes, which have entirely perished. We regret, however, to see that the whole of the apple trees are covered with American blight, the insect being already matured and prepared to fly the moment the box is opened. Though this proves that the insect must have been in the ground or round the roots in the first instance, it evidently shows that the close atmosphere which it enjoyed in the pent-up boxes is peculiarly favourable to its propagation: and thus we see that those gardens which are in the lowest and most confined situations, and but little exposed to winds, are most attacked by it. (*Hobart Town Courier*, July 17. 1830.)

We find, from advertisements in the same paper, that the average price of young healthy fruit trees, of the ordinary kinds, in Hobart Town, is 5*s.* each; and that hawthorn berries form an article of exportation. These, deprived of their pulp, sell at 10 guineas a bushel. — *Cond.*

Art. III. *Domestic Notices.*

ENGLAND.

Peake's Vases, Flower-pots, Tallies, and other Gardening Articles, will be found figured and enumerated in the advertising sheet which accompanies this Number. To those who have not seen any of these vases, we think it but justice to Mr. Peake to state that the beauty of the workmanship far exceeds any thing of the kind which has hitherto been attempted in England; and, as far as we know, they are equally in advance of the pottery of the Continent, and even of Italy. We have seen at Earl Mansfield's, at Caen Wood, a number of vases of potter's ware, lately chosen by the family when in Italy, and now arranged in the flower-garden. We were informed by a London potter, that these vases were so much prized by Lady Mansfield, that she declined allowing him to get copies of them, lest they should be rendered common. We were therefore rather curious to see them; and, having applied at the season when they are set out of doors (for during winter they are kept under cover), we must say we never were more disappointed. In general form they are misshapen, and the details of the sculptures, flutings, mouldings, and foliage are very imperfect. Deprive them of the associations connected with the country they came from, and they would not find purchasers in an English earthenware shop. We cannot say that we admire the forms of all Mr. Peake's vases; that may be matter of taste: but for the correctness of the shapes intended to be given, the sharpness of the sculpture, and the foliage, we will say, that neither the Italian vases at Caen Wood, nor any which we have seen in Boboli, or other gardens at Florence, or in any gardens in Italy or France, are at all to be compared with them. The column for a sun-dial, or for supporting a bust, is an object perfectly beautiful in its kind.

The brick tallies for naming trees in arboretums will, we are of opinion, be found far superior to any other for this purpose; they are formed of semi-metallic earth, and must last for centuries: their cost, delivered in London, is only from 3*s.* to 4*s.* per 100.

These brick tallies have panels in the end, like Murray's tally (Vol. III. p. 28.), and the name may either be printed on a card or written on a slip of wood, and covered by a piece of glass, and so made air and water tight by putty; or, what would perhaps be better, a plate of dull white earthenware might be made to fit the panel, with the name painted on it, glazed and burnt in, or painted and varnished, and then made secure by putty.

Mr. Peake's Grecian tiles for roofing cottages we have already figured (Vol. VI. p. 154.); he has since greatly improved the joint-tile; and he considers, that these tiles, being made from semi-metallic earth, will form one of the most durable of roofs, both for small and large buildings.

In our next Number we shall probably give figures of all the objects alluded to, with some further details; in the mean time we consider the above notice as due to Mr. Peake, for his liberality and public spirit, in having, at our request, gone to a very considerable expense in preparations for the manufacturing of these articles. — *Cond.*

To be able to draw Flowers botanically, and Fruit horticulturally, that is, with the characteristics by which varieties and subvarieties are distinguished, is one of the most useful accomplishments of young ladies of leisure, living in the country. It is due to Mrs. Withers of Grove Terrace, Lisson Grove, to state that her talents for teaching these objects are of the highest order, as many of the plates in the *Transactions of the Horticultural Society* and the *Pomological Magazine* abundantly show. We have observed, with no small pride and pleasure, that several of our principal nurserymen, not only about London, but in the country, have brought, or are bringing, forward their daughters, so as to be competent to make scientific portraits, not only of fruits and flowers, but of trees and shrubs, in their different stages of growth. When once a system of education is formed which shall embrace all modern improvements, and when that system shall be universally applied, the drawing and making portraits of all, or of any objects whatever, will be as general an accomplishment as penmanship is now. To all the mechanical trades, drawing is perhaps of more use than either writing or arithmetic. It is of immense use to a gardener; and we hope no young reader will neglect its acquirement. He may do it by continually copying the cuts in this Magazine, or Plate I. of *Illustrations.* — *Cond.*

The Botany of various Parts of North America being very imperfectly known, we learn with pleasure from Mr. William Christy, jun., that "Dr. Hooker and others are going to subscribe and send out Mr. Drummond to New Orleans; whence, on the approach of summer, he will ascend the river, and get into the country bordering on Mexico or California, which is expected to prove a most interesting field. Mr. Drummond will send home dried specimens, roots, and seeds, and also birds and insects, to the various subscribers, according to their wishes, and the amount of the sums they advance, and afterwards collect for sale on his own account." We hope the expedition will prove successful. — *Cond. Dec.* 4. 1830.

An adventure similar to the above, although not so well advised, was embarked in by a very enterprising young man, Mr. Thomas Bridges of Wroxham, Norfolk, about two years ago. Fired by the successes of other collectors, and strongly desiring to visit foreign countries, he solicited some gentlemen, to whom he was known, to make the advances necessary to send him out. This they did; and, after a boisterous passage of nineteen weeks and five days, he landed at Valparaiso. Since his arrival he has sent home birds, insects, plants, and seeds. The late Robert Barclay, Esq., Bury Hill, was one patron, to whom birds and plants, both of considerable interest, were sent. Another patron is the Rev. Geo. Reading Leathes, Shropham Hall, Norfolk, who has received seeds; and a third patron is Robert Bevan, Esq., Rougham, Suffolk, who has received seeds and insects, if not also birds. This last gentleman has submitted the insects to the cognizance of the distinguished Rev. William Kirby, who finds some perfect novelties among them, which he has already described, if not published; and the seeds Mr. Bevan has intrusted to the skilful cultivation of Mr. Knight, of the Exotic Nursery, Chelsea, where several are at this time growing. Mr. Bridges has fixed his residence at Valparaiso, as a general collector and vender of all the productions of nature, which he will procure by incursions into the adjacent country, and by purchasing of the natives, making his residence the depôt of his acquisitions. Mr. Bridges had spent some years among the plants already in England before his departure, and was by no means wholly uninformed in the other departments of nature. We consequently anticipate much benefit to natural science from his labours, and hope from time to time to be enabled to describe the progress of them. — *J. D. Jan.* 8. 1831.

A Public Botanic Garden near London. —We have heard botanists regret and express their astonishment at the non-existence of a public botanic garden in the neighbourhood of London, in which the most perfect collection that the scientific connections and resources of the empire could furnish should be preserved and cultivated. Such an institution, they represent, is much wanted, and would, did it exist, give a prodigious impulse to the progress of botany. If, say they, a person is now desirous to acquaint himself with any particular family of plants, he must traverse the whole suburban circuit of London, to find in the various plant establishments the species which compose it; a course of study evidently so absorbent of time and resources as to prevent many from adopting it: but which persons, could they recur to one comprehensive skilfully managed collection, where all the species of any family, or nearly all, could be found assembled, would at once, and with joy, resort thither and obtain the knowledge they desired. The present time is, for various reasons, and among others one which we are not at liberty to mention, more than usually favourable for carrying such a project into execution. Were any botanist at leisure to draw up a scheme, and canvass in London and its neighbourhood for subscribers at *5l.* a share, or a guinea a year, we are certain he would succeed. — *R. S. Jan.* 10. 1831.

Change in the Site of the Botanic Garden at Bury St. Edmund's. — It has for several weeks been understood that a negotiation was pending, which had for its object one of the greatest acquisitions that it is possible for this town to receive, we allude to the conversion of the beautiful Abbey Grounds into a botanic garden; for which purpose, we have now the pleasure of announcing that the Marquess of Bristol will grant a long lease to Mr. Hodson, the able superintendent of the present garden. Every one who is acquainted with the extent and picturesque character of these grounds, the site of the great court of the abbey and the abbot's palace, must be aware how highly eligible they are for the contemplated purpose; so much so, that we question whether any thing more beautiful of the kind, than they are capable of being rendered, is to be found in the kingdom. The garden will be entered through the magnificent, we may almost say unrivalled, gateway of the abbey, the vacant spaces on each side of which will be enclosed with palisades, and planted, and the old walls will be covered with ivy. During the day-time the unsightly boarded doors will be thrown back, and inner gates of open work will exhibit an enchanting vista from the Angel Hill, which has been the only thing needed to render that fine area absolutely perfect. This great improvement will give to the inhabitants, at a small cost, the enjoyment of a beautiful garden in the immediate neighbourhood of their own houses, abundantly spacious for the purposes of air and exercise, and exhibiting such charms of scenery as are rarely to be found in immediate contact with the seat of business. The " lungs of the town " will, in fact, be close to its heart. It is an improvement which has long been desired; and the Noble Marquess, we know, has participated in the wish to afford the town such a source of pleasure and accommodation. We trust, therefore, that the spirited enterprise of Mr. Hodson will be very generally supported. (*Bury and Norwich Post,* Nov. 17. 1830.)

Hull Botanic Garden. — The Annual Meeting of the proprietors of this Institution was held on May 5., Colonel Althorpe in the chair. The attendance was unusually numerous. The report of the curator stated that, since the last General Meeting, the following alterations and new work have been done in the garden: — The flues of the green-house and west stove have been taken down (being in a decayed state), and built upon a more improved method, which has been found to answer remarkably well, and both stoves have been painted. A pit 30 ft. long by 6 ft. wide has been put up for raising seed, propagating plants, and for other useful purposes. Eight hundred cast-iron labels have been got for naming the plants in the herbaceous arrangements; and on each quarter of the arrangements a quantity of old tanner's bark and soil has been laid, which, with the draining of the preceding year, have been of the utmost importance to them. The plants are arranged according to the Linnean system, and the blanks will be filled up as opportunity and the state of the ground will permit. A number of resolutions, founded on an alleged increase of debt to a large amount during the past year, were moved by Mr. Snowden, and led to an animated discussion; but they were all rejected, it appearing that there were no grounds for the allegation. Mr. Snowden also moved some alterations in the laws, but they were not adopted, except one, which permitted a proprietor or privileged person to have a female attendant with children, such attendant not to remain after the departure of the principal. (*Hull Advertiser*, May 7.)

Birmingham Botanical and Horticultural Society. — *Birmingham, Oct.* 26. 1830. " The general object of this Institution is to encourage horticulture and botany, and, as the first step, to form a garden in which both these departments may be practically pursued upon an enlarged scale. The extent, however, to which it can be carried must necessarily depend upon the support which can be obtained; and increased funds are still necessary to make it worthy of so large, populous, and wealthy a district. The establishment of a garden, however, can only be regarded as a preliminary measure; and the committee look forward to the time when, by means of public exhibitions of fruits and plants, and the distribution of prizes, they may be able to benefit horticulture and botany in a still more efficient manner. Nor will another important object be overlooked, viz. the education of more able and scientific gardeners than are now common. At a General Meeting of the shareholders, held on the 19th inst., it was, at the recommendation of the committee, determined that the garden should be formed at Holly Bank, in the parish of Edgbaston, on land at present in the occupation of Mr. Apsley, as soon as the required number of shares should be subscribed for. The site thus placed at the option of the Society is peculiarly favourable to the formation of an establishment of the kind, as it presents every variety of soil and aspect that can possibly be required; and, through the liberality of Lord Calthorpe, it can be obtained on advantageous terms. Of the value of an institution like the one proposed it is unnecessary to say much. Few persons can hesitate to recognise horticulture and botany as important departments of science, when they recollect that the greater part of the food of man is of vegetable production; that to the progress already made we are indebted for wheat and potatoes as common articles of sustenance; and that from the increased investigation which botany has excited some of the most valuable medicines we possess have been discovered."

We are more than commonly gratified at witnessing the establishment of a horticultural society and garden in the neighbourhood of such a populous and intelligent town as Birmingham. We understand that the ground fixed on for the garden is situated at Edgbaston, and consists of 12 acres of a beautifully varied surface, with hill, dale, water, peat, loam, every variety of aspect, and complete shelter from the north by rising ground exterior to the site; while on front of it, to the south and south-east, is spread out one of the finest landscapes in the central counties. Lord Calthorpe has granted a lease of the land for 99 years at 100*l.* per annum, which may be considered a moderate rent for land so near a rapidly increasing town. The curator of this garden was to have been chosen on January 10.; its honorary secretaries are John Darwall, M.D., and Thomas Knott, jun. — *Cond.*

Heating by hot Water. — The Camellia houses at Messrs. Chandler's nursery exhibit a beautiful specimen of Mr. Kewley's application of the siphon principle; as do the indigo and other rooms at St. Katherine's Docks, and the conservatories at the Colosseum, of the principle of Mr. Weekes, as applied by Messrs. Walker. In the interior of the Colosseum Mr. Cottam has exemplified his mode, and he has also just completed the heating of a small hot-house in our garden; while Mr. Walker has heated our office to our no small comfort, in regard to warmth and freedom from dust, and to economy in the saving of the time consumed in stirring an open fire, and in the article of fuel. — *Cond.*

Lavender Hill Nursery, Wandsworth Road, Nov. 24. 1830. — It is my wish to establish at this nursery a depôt for supplying the wants of botanists and collectors of *old* books in this department, at a moderate expense; which are not easily obtained, especially by persons situated at a remote distance from the metropolis. With this object in view, I am now ready to receive commissions for the purchase or sale of this description of literature. — *William Pamplin, jun. Lavender Hill Nursery, Wandsworth Road, Nov.* 24. 1830.

Traps for catching Larks. — The fowlers in our neighbourhood have commenced taking larks with nets and a device glass of simple construction. The birds are of the kind known as hill or flight larks. A small bridge, covered with a piece of glass, is by means of a draw-string made to revolve rapidly on a pivot, the rays of a rising sun falling on the glass. Such is the strange infatuation of the birds, that, however distant, they immediately fly towards it, and are either taken by clap-nets or shot. (*Brighton Herald.*)

Pimlico Palace and Gardens. — Sir, I had yesterday (Nov. 10. 1830) an opportunity of walking through the grounds of the new palace at Pimlico; and I will trouble you with a few lines upon the subject, if you can find room for their insertion. I saw these gardens in 1826, and was struck at the time with the unhealthiness of the situation, and the tasteless distribution of the earth excavated in order to form the piece of water. The garden-front of the palace was then new, and brilliant white: what first struck me now was its dark dingy appearance; and yet, on expressing my regret at this to my guide, he assured me that it had been cleaned, since its first erection, twice, if not thrice. The same general appearance of scattered blocks of stone, scaffolding, and enclosure poles exists as in 1826; a proof that the building is not nearly finished even exteriorly. The conservatories are open on the sides and ends; some richly sculptured vases have been placed on the terrace parapet, but (which, to an architectural eye, is very offensive) they are without plinths. The faults of the building may be summed up under two heads: first, as a composition, it does not constitute a whole, for want of a decidedly central form; and secondly, that all the details, and especially the doors and windows, are of vulgar forms and ordinary dimensions. In short, the pile seems a heterogeneous assemblage of portions of street houses, especially of those in Regent Street, and of the buildings round the Regent's Park.

The grounds or gardens have a common-place air, from the prevalence of elm trees all over them. This air, though lessened, is by no means removed by the clumps of rhododendrons and other shrubs which are distributed in different parts; though, to do the gardener (Mr. Man) justice, these clumps are well placed, and exceedingly well managed. The great error of the designer of the garden, whoever he may have been, lies in his not having directed the planting of trees of various species to grow up, and take place of the elms; the latter to be cut down as the former became fit to succeed them. Such trees might have been procured 20 ft. high, of upwards of 100 suitable sorts, from the arboretum of Messrs. Loddiges, at Hackney; and I mention this nursery garden, because it is about as much in the London smoke as the grounds at Pimlico are. But it would appear that the common stuffing of shrubberies has been thought quite good enough, both for the Pimlico gardens and the recently planted groups at St. James's Park.

In the upper part of the grounds, immediately within the ornamental archway, is the notorious pond or reservoir, 100 ft. in diameter, and 30 ft. deep, built of brick laid in cement. This is, perhaps, as useless a work as ever was planned or executed, since it was intended only for receiving a portion of the water of the Serpentine River on its way to the new piece of water near the palace. Had it been necessary to raise the water to a higher level, or had there been any scarcity of water, there might have been some excuse for forming a reservoir: as things are, I defy its architect, let him be who he will, to point out any useful object whatever gained by this pond. As a proof that I am correct, the pond is now nearly empty; the supply to the lake at the palace merely running in by one pipe near the top, and running out by another pipe near the bottom.

The Roman archway, intended as the royal entrance of a road to which this reservoir forms an insuperable interruption, is, in my opinion, much too gorgeous a pile for the taste of the present day. Let this, however, be considered a matter of opinion. As the arch was erected after the reservoir was completed, there must have been some strange neglect somewhere to have occasioned such an absurdity. On these two works upwards of 20,000*l.* must have been expended; and it is clear that neither of them is of the slightest use. — *J. W. L. Nov.* 11. 1830.

Rouge Plant and Guaco Plant. — Dr. Hamilton has received a letter from Mr. D. Fanning, the proprietor of the botanic garden at Caraccas, including some rare seeds from that country, among which was one, a *Convólvulus*, which furnishes a striking example of the great power of vegetation within the tropics, as Mr. Fanning mentions his having trained it 5000 ft. in the space of six months. Some seeds of a most beautiful Crotalària, and a few seeds of the Rivìn*a* tinctòria, or rouge plant, which cannot fail to come into high repute among the fair dames of fashion. It is believed by the secretary to be a nondescript species; and he has, therefore, given it the provisional name of tinctòria, from its peculiar properties, as a means of distinguishing it till an opportunity offers of determining it botanically. It is much used as rouge by the ladies of Caraccas, one berry being sufficient for the service of the toilet at one time. It possesses two qualities which will strongly recommend its use in preference to any of the rouges commonly employed, that of not injuring the natural complexion, and that of not being affected or obliterated by perspiration, while its colour equals that of the finest carmine. From the account given by Mr. Fanning, we should conceive this fine pigment capable of being usefully employed in the arts. A few of the seeds have been given to Mr. Pontey. Dr. Hamilton is promised a supply of twelve bottles of the juice of the Guaco plant, so celebrated as an antidote to the poison of snakes, and an infallible cure for gout, rheumatism, and a multitude of other distressing maladies. The abundance of this supply will enable it to be tried upon a large scale. It may be expected by the first vessel from La Guayra that touches at Cowes. (*Plymouth Journal*, Sept. 16.)

Seeds of the Palo de Vaca, or Milk Tree, and of the Guaco (the Mikània *Guàco* Hort. Brit. p. 333.) have recently been sent home by Sir R. K. Porter to the Misses Porter, the distinguished authoresses, at Esher. These ladies having sent the seeds to us, in order that we might present them to the Horticultural Society, we accordingly did so; and the following extract from the letter acknowledging their receipt will show that there is still room for exertion on the part of Sir R. K. Porter, Mr. D. Fanning, and others, on this subject: — "I regret to say that the Palo de Vaca seed is quite dead; and that the Chica seeds have been so devoured by insects as not to be likely to grow. With regard to the Guaco plant, we have it growing in the garden of the Society, but it has not yet flowered. Would it not be as well to hint to Sir R. K. Porter that some doubt is entertained in this country of his Guaco plant, which is well known to botanists, being really the famous medicine of the Indians; and that as it is, at all events, a hot-house plant in this country, it can scarcely be cultivated extensively for medicinal purposes?" Plants of the Mikània *Guáco* may be seen in the hot-house of Mr. J. Knight, of the Exotic Nursery, Chelsea. — *Cond.*

A Cockscomb in this garden measures, from the surface of the earth to the top of the flower, 8½ in.; the crest of the flower 26 in. long, and the breadth 11 in.; very compact and full in every part, and the colour a most brilliant crimson. — *John Harrison. Syston Park, Oct.* 10. 1829.

Destruction of Auriculas and Tulips. — The admirers of flowers in Beverley and its neighbourhood have been greatly disappointed this year by the destruction of Mr. Marmaduke Carnaby's fine and valuable collection of auriculas and tulips, some malicious person or persons having impregnated the earth with a pernicious ingredient, which has destroyed the whole of his auriculas, consisting of nearly 300, and his tulips have suffered in like manner. The earth has been analysed by a chemist, but the ingredient we forbear to mention. We are glad to hear that the florists in Hull and its vicinity have kindly offered him the choice out of their collections, in order to console him for his loss, and to show their detestation of the act practised against him. The value of the plants cannot be estimated at less than 70*l.* or 80*l.*, and they had occupied him above twenty years in collecting. (*Hull Advertiser.*)

We differ from the writer of this paragraph as to the propriety of concealing from the public the article (in all probability, common salt) with which the soil was poisoned: because, in the first place, as a general principle, the truth ought never to be concealed; and, secondly, as a principle applicable in this case, the actions of man ought to be regulated by a knowledge of the good and evil which flow from them (and good thus produced), and not by the ignorance of that evil, or by the constraints of power. Are the hearts of gardeners and cultivators naturally so bad, that if it were generally known that salting soils strongly would destroy all the plants which grow in them, a great many persons would be found destroying the finest flowers of their neighbours in this way? No such thing! Does not every male or female servant know how easy it would be to set fire to their master's house, or to blow it up with gunpowder? and have they not opportunities of doing so every day? Human nature is not naturally bad, but full of human sympathy, of affection for the species, and of kindness and goodness; unless, indeed, when the natural good qualities are poisoned, like the soil of Mr. Carnaby's tulip beds, by bad laws and bad treatment. But admitting that some minds are tainted, and that they know not that soils could be poisoned by common salt, would it not be better to conceal the fact from these minds? In our opinion, by no means. If the evil-disposed should poison soils, let them be punished: but do not incur a greater evil, and hide from the upright man how weeds may be poisoned, and how dangerous it is to apply an overdose of salt when it is used as a manure. We have already given our opinion on this subject (Vol. III. p. 42.), and must request our readers to reperuse what we have there written. — *Cond.*

Campánula Médium. — Walking round the garden to-day, I observed a *rabbit very eagerly* devouring plants of the above. Examining further, I found that the snow had been scratched away from seven clumps of this plant, and that they all had been eaten down quite close to the ground. — *H. Turner. Botanic Garden, Bury St. Edmund's, Dec.* 25. 1830.

The above remark pleases us much, because it reminds us of the lines by Pope, in his *Essay on Man:* —

> " Go, from the creatures thy instructions take:
> Learn from the birds what food the thickets yield;
> Learn from the beasts the physic of the field," &c.

This act of the rabbit is precisely tantamount to the conclusion to which man has arrived after years of scientific application. Lindley, in his *Introduction to the Natural System,* says of the natural order Campanulàceæ, " The milky juice of these plants is rather acrid; but nevertheless the roots and young shoots of some species, particularly of Campánula *R*apúnculus, or Rampion, of Phyteùma spicàta, of Canarìna Campánula, &c., are occasional articles of food."

> " Say, where sure instinct is the unerring guide,
> What pope or council can they need beside?"
> *Pope's Essay on Man.* — *J. D*

The Bamboo is to be found in different gardens in Jersey from 8 to 12 ft. high; for example, in Saunders's nursery. — *R. Sept.* 22. 1830.

Remarkable Pears. — Your correspondent, Mr. B. Saunders of the Island of Jersey, informs me, in a letter dated Sept. 6. 1830, that he has been on a tour through some parts of France, and has met with a pear weighing 4 lbs., and another without either core or seed. — *S. Sept.* 1830.

A Sweet Chestnut of a very superior sort, well deserving the attention of nurserymen as a source of scions for grafting, stands in the garden of Capt. Clemens in the parish of St. Peter's, Jersey. Mr. Donald of the Goldworth nursery, and Mr. Roy of Aberdeen new nursery, expect to have plants for sale in the autumn of 1831. — *R. Sept.* 22. 1830.

The Kassaba Melon. — Sir, I enclose some seeds of the Kassaba melon, which is deservedly esteemed as one of the finest among the fine ones cultivated on the coasts of islands of the Levant. The seed was originally introduced by our generous-hearted and public-spirited Commissioner Ross of the dock-yard here, who brought it with him from Malta, and gave me a few grains last spring, some of which I gave to our late county member, Mr. Bastard of Withy, the munificent founder of our Horticultural Society here, and a gentleman who does more substantial good without noise, than those who suffer their benevolence to evaporate in fine speeches which mean nothing. The Kassaba melon, a fruit of which Mr. Bastard kindly sent me as a specimen and for the sake of the seed, is of a large size, resembling the form of the Cucúrbita lagenària, of a bright yellow when ripe, very succulent, almost indeed equalling the Cucúrbita *Citrúllus,* of a fine flavour, and must be highly grateful in warm countries. I know not whether it has ever been cultivated in this country before: it certainly differs from the fruit of any of those described in the last edition of the *Hortus Kewensis.* It appears either a hybrid or a connecting link between Cucúrbita and Cùcumis, both from the appearance of its fruit, and a manifest tendency exhibited in some of its seeds to a margin round the edge. — *W. Hamilton.* 15. *Oxford Place, Plymouth, August* 28. 1830.

An excellent Variety of Cucumber is grown in the forcing-houses at Syon. The fruit is long, perfectly smooth, and the leaves extremely large (18 in. across): they are grown in boxes placed over the back flue of the pine-pits, and the shoots trained under the glass over the path. Mr. Forrest has gathered fruit daily since October last, and will continue to do so, if he chooses, all the year round. — *Cond. Jan.* 5. 1831.

Large Pumpkin. — Sir, Since the commencement of your excellent work, the Gardener's Magazine, you have favoured your readers with several accounts of large pumpkins, but you have recorded none equal in size to one I grew in the garden here in the summer of 1826. Therefore I beg to solicit the favour of your goodness, that you will be pleased to give the particulars of mine a place in your pages. It measured in circumference 9 ft. 3 in., and weighed 245 lbs. This pumpkin was considered by every person who saw it to be the largest ever grown in this country. But if we are wrong in our opinions, I hope some of your numerous readers will correct us. I remain, Sir, &c. — *Richard Saunders, Gardener to C. Hoare, Esq. Luscombe, near Exeter, Nov.* 9. 1830.

I send you a large Mushroom, with a small one adhering to the summit of its cap, from the mushroom-bed of Mr. Greenwood at Brompton. The curiosity is not uncommon, and is easily accounted for by supposing the mushrooms growing close together on an irregular surface, or pushed out irregularly from irregular surfaces. — *J. Morrison. Brompton, Nov.* 16. 1830.

SCOTLAND.

New or rare Plants which have flowered in the Neighbourhood of Edinburgh. — Calceolària bícolor. An extremely pretty addition to our cultivated species (now fifteen in all, exclusive of the hybrids, and of the narrow-leaved variety of C. integrifòlia), resembling in colour the pleasing subdued tint of C. scabiosæfòlia. — Commelìn*a* formòsa. Green-house. — *G*enti*àna* cæspitòsa. Open border. — *H*ibíscus divaricàtus. A handsome species from New Holland. — *Loàsa* híspida. From the valley of Lima, by Mr. Cruickshanks. Green-house. July. — Palàv*ia* rhombifòlia. A border annual; pretty. — *R*hododéndron lappónicum. The exertions of Mr. Cunningham, of the Comely Bank nursery, have been rewarded by having first in Britain brought into flower Andrómed*a* *h*ypnöìdes and *R*hododéndron lappónicum. They are still under the same hand-glass in the nursery at Comely Bank, near Edinburgh. This plant, as well as the other, was brought from Canada by Mr. Blair in 1825. It flowered in July. (*Prof. Graham* in *Jamieson's Jour.*, Oct. 1830.)

Ibèris umbellàta. — I had this season some beautiful specimens of *I*bèris umbellàta (dark variety): one plant 3½ ft. high; others, though not quite so tall, full 6 ft. in circumference. The seed was sown the previous season (as directed by one of your German correspondents), the plants taken up and potted about the end of October, kept in a frame during winter, and turned out into the border in the spring. They should be planted out in some sheltered place, or some precaution should be taken for their support, as their long branches are very liable to be broken away by the wind, at the junction with the centre stem. The method I took to support them was to take two long thin pieces of mat string and plait them, including the outside branches at about half their height, at regular distances, between the strings; and when this was carried round the plant and attached to three or four short sticks stuck in the ground, I found it answer very well, and it was free from that stiffness generally observable in plants tied up. I find that the larger the plants are when potted, the larger in proportion they become the following year. — *A. W. Crosslee Cottage, near Glasgow, Oct.* 25. 1830.

Listèra cordàta. — On searching for some plants of the Listèr*a* cordàta lately I entered a plantation on the estate of Lord Willoughby, parish of Cargill, Perthshire, composed of Scots pine, where I found it occupy several acres, and the plants standing close. On passing into another plantation, at some distance, where strips of Scots pine and larch stood alternately, I found the plant abound amongst the Scots pine, but uniformly disappear amongst the larch. I found it grow most luxuriantly amongst the half-decomposed pine leaves and smaller branches, the roots running amongst them a very short way under the surface, from which I conclude that, in cultivating this plant, a soil from the surface of a Scots pine plantation should be adopted, a soil which nature seems to point out as most congenial to its growth. — *John Young. Kinnoul Nursery, July* 1. 1830.

Huge Rose-bush. — Mr. Ramsay, gardener, Chancelot, has a gigantic rose-bush in his garden, which excites the admiration of all visitors. It is nearly 10 ft. in height, and measures fully 30 ft. in circumference. Mr. Ramsay has it very tastefully dressed and trained; and it is considered by horticulturists not only the largest, but among the handsomest rose-bushes in the kingdom. (*Scotsman*, June 24.)

New Plan of sticking Peas. — Procure a number of slim poles, about 5 ft. long (the tops of larch firs, if they can be found), and drive them into the ground at the distance of three or four yards. Pass a small line along the poles, taking a turn on each, within three inches of the ground; raise the next turn three inches, and so on in succession, till you have attained the common height to which the peas rise. The tendrils of the peas seize and twist round these lines, and they are supported in a more attractive and a more profitable manner than they are by the common stakes. When spread regularly along the lines, they have a fine circulation of air, more advantage from sunshine, and pods can be pulled at all times without tossing and injuring the straw; and as the sparrows have no twigs to alight on, the portion of the crop which they destroy and devour is saved. This mode is so cheap, simple, and possesses so many advantages, that it is likely to be soon generally adopted. (*Scotsman.*)

Naming Roads, Lanes, and Villages. — Robertson, in his *Rural Recollections*, mentions that such is the spirit of mischief inherent among idle boys in Scotland, that they not only mar and deface guide-posts, but even mile-stones. This was written in 1829! What a shame for a people who call themselves a nation of gentlemen!! Gentlemen, indeed! — The time is not far distant when there will not be a lane, a foot-path, or a village, which will not have its name placed and kept up by the public authorities, as the names of streets now are in London. — *Cond.*

Bell's Reaping Machine. — Sir, We have some time ago finished our third campaign with the reaping machine. This season, like the former, the elements have been against us. Lodged and broken-down crops, together with fields completely saturated with rain, are what we have had this year to contend with; and these are obstacles which, of all others, are the most to be dreaded in the successful application of a reaping-machine. Notwithstanding these difficulties, however, it gives me pleasure to be able to give you a favourable account of our operations; at least as favourable a one as could have been expected, all things considered. As far as I know, there were altogether twelve or thirteen machines constructed this past season, all of which worked more or less; though, as by far the greater number were only newly constructed, their proprietors very wisely did not entirely depend upon them, but had the usual number of hands for their harvest work, only trying the machines by way of experiment, to ascertain their powers, so as to enable them to form their plans for next year's proceedings. Of course little good was obtained by their use under such circumstances; but, as far as I know, the farmers were satisfied that in a future season they would be able to use them with advantage.

My attention was of course principally directed to what took place in this immediate neighbourhood; and, to give you an accurate idea of the practical operation of the machines, I shall state particularly the manner in which my father's and brother's machines wrought this season. I believe I have mentioned to you in some of my former letters that my father's farm is very small; in fact, it is too small for a reaping-machine. This year he had only twenty-five acres under crop; twenty-four of which were cut by the machine in forty-seven hours and a half. This, you will observe, was the actual time that the machine was working, though we never had occasion to work longer in one day than five or six hours; that is, as near as may be, half an acre in the hour. My brother had 60 acres under crop; ten of which were cut before he got his machine, and ten were in a field newly brought under the plough, and, of course, could not be cut by a machine. The other forty he cut by the machine in 74 hours; that is, a little more than half an acre in the hour. The crops cut, both on my father's and brother's farms, were wheat, oats, and barley; and they were mostly cut by the machine working in one direction. Both machines, however, cut partly both ways, when the corn and wind would answer; when cutting both ways, about an acre in the hour was always cut. When the machine was working in one direction, seven or eight people were necessary to collect, bind, and stook: when it was working both ways, of course nearly double that number were required. We find, by experience, that the machine will cut both ways when the corn is standing upright, or nearly so; and also when it is laid nearly parallel to the furrows, or when it is completely broken down, so that one could not say which way it is laid. The machine works to great advantage amongst the latter description of corn; as it is difficult to cut it well in the common way, and the machine actually evens it during the process, so that it is evener laid down in the *bout* than it stands in the field. I have not yet had an opportunity of seeing the machine operate amongst beans; and though it would not cut peas at all, I am of opinion that amongst clean beans it would work to great advantage. Besides the machines that I have mentioned, there are a considerable number more on the stocks, since harvest, in various parts of the country. Two are going to Van Diemen's Land, and will be finished about the beginning of the new year. One of them is to work with two horses, and one with only one horse. Wheat in this quarter is bad; barley indifferent; oats good. Potatoes an average crop; turnips indifferent; and great deal less wheat sown than usually; no cure for the fly amongst us. Yours, &c. — *Patrick Bell. Mid Lioch by Dundee, Nov.* 11. 1830.

Wilkie's Banking Ploughs. — We send a great many ploughs every shipping season to Jamaica; some time ago twenty-seven for one house. These ploughs are made much stronger than any used in Britain, because they are to be drawn by twelve or fourteen cattle. They have generally one or two wheels placed under the point of the beam. To give greater strength to the beam, without adding to the weight, we sometimes weld it up with steel. These ploughs are called in Jamaica banking ploughs. — *James Wilkie. Uddingston, near Glasgow, Sept.* 25. 1829.

IRELAND.

Practical Horticultural Society for Ireland. — "The objects of this Society are: — The formation of a library, to consist of the most approved works on the subject of horticulture; the establishment of an experimental garden in the vicinity of the metropolis, as a school for the education of gardeners, and to afford employment to gardeners of good character out of situation; to collect, embody, and diffuse information tending to elucidate horticultural science; to award premiums, and other marks of distinction, thereby to excite emulation amongst gardeners; and to endeavour to advance horticulture, in this country, to the rank to which it is entitled amongst the sciences of an enlightened nation.

"*Rules of this Society.* 1. That noblemen, gentlemen, and ladies subscribing 1*l.* annually shall be members, or subscribing 10*l.* within one year, shall be members for life. 2. That nurserymen, seedsmen, and gardeners, regularly admitted, subscribing 10*s.* annually, shall be members; and subscribing 5*l.*, within one year, shall be members for life. 3. That a president, vice-president, and secretary, together with a committee consisting of fifteen members, shall be chosen annually, by ballot, to conduct the business of the Society; seven of the committee to constitute a quorum. 4. An annual meeting of the Society shall be held in Dublin in the month of *April, when a report* of the committee and statement of the accounts, verified by three auditors, shall be presented. 5. That no operative be admitted a member of this Society, except such as shall have been proposed by one member of the committee and seconded by another; and that no person whose character can be impeached with immorality or intemperance can on any account be admitted a member; and if any member should be found guilty of any such offence, he shall for the first offence incur the censure of the Society, and upon repetition of the same shall be expelled, forfeiting all subscriptions or donations which may have been paid by him up to the period of expulsion. 6. That gardeners, previously to becoming members of this Society, must have been occupied at least five years at their profession. 7. That journeymen gardeners, previously to becoming members, must have been employed at least five years in some noted garden or gardens. 8. Tradesmen of other denominations may be admitted members of this Society, on paying the same amount of subscription or donation as paid by gardeners, and shall be entitled to exhibit plants, flowers, fruits, &c., for which they shall receive premiums in every respect as if the same belonged to gardeners. 9. Length of service is meritorious; and a premium shall be awarded to every gardener who shall henceforth have served five years in one and the same situation. 10. That the committee be competent to make such rules and regulations connected with the business of the Society as shall be deemed necessary, the same to remain in force until rejected by a general meeting of the Society. 11. Any member calling in question the judgment of those appointed to award premiums, or attempting to evade any of the rules of the Society, shall pay a fine to the amount of his annual subscription, or be expelled the Society, as a majority of the committee shall decide. 12. All drafts for payment shall be signed by the chairman and three members of the committee. 13. That the secretary shall not, at any one time, retain more on hands than 10*l.* of the funds, for discharging the current expenses of the Society. 14. That the funds be lodged in the bank of Messrs. Latouche and Company.

"That the science of horticulture has, since the commencement of the present century, been advancing with unprecedented strides towards perfection, as well in England and Scotland as on the Continents of Europe and America, whilst that in Ireland, during the same period, it has been merely stationary, if not retrograding, is a truth not less certain than humiliating to gardeners and the amateurs of gardening in this country. Much, doubtless, might be offered in extenuation of this apparent apathy. The absence from the country of those whose affluence might put the higher departments of the profession in requisition, and, consequent on this, the paucity of gardens where all the branches of gardening are practised, and where alone gardeners could be properly educated; the limited influence, followed by the total failure of the Horticultural Society, established in this city in the year 1816, from which the aristocracy of the country ever stood aloof; in a word, the total want of encouragement, and of an experimental garden, such as, with the assistance of those interested in the advancement of horticultural science, we hope to establish, with various other causes, have conspired to render a country, which for its climate and soil has been evidently intended by nature to exhibit the perfection of horticulture, a blank in the history of the science. On the utility of horticultural societies, judiciously conducted, there is not any diversity of opinion; and with the proceedings of those that have long flourished to guide us, and of those that have failed and are failing to warn us, we confidently hope to be enabled to follow the one and to avoid the other. It being of the first importance that the experimental garden should be established with as little delay as possible, and the funds at present in the hands of the treasurers not being adequate to that purpose, all persons wishing to become members will have the goodness immediately to signify such their intention to the secretary. All communications on the business of the Society to be addressed by letter, free of postage, to John Lindsay Richardson, Esq., Secretary, 27. Upper Rutland Street, by whom donations of books for the library, and plants for the experimental garden, will be thankfully received."

By a letter from the secretary dated Sept. 15. we are informed that the Society dates its existence from the 17th of March last; and that its members at the time of writing amounted to nearly two hundred, including "some of the most intelligent practical gardeners in Ireland," most of them "reading men." We augur much good from a society so constituted, and most sincerely wish it every success. We are not surprised to learn that the aristocracy of Ireland "stood aloof" from the Horticultural Society established in 1816. An aristocracy, to patronise a horticultural society, must be resident; but that of Ireland may for the greater part be described as a foreign aristocracy, being of a different blood, a different religion, and residing in a different country. But the times, we trust, are gone by for trusting to the aristocracy of any country. The people is now the word; and we are glad to see the rules of this Society such as to admit of enrolling among its members practical gardeners of every description, resident cultivators of their own soil, and every tradesman and mechanic who has a garden. These men constitute the strength of a country; and it is gratifying to reflect on the increase that will be made to their enjoyments, and especially to their love of home, by an improved knowledge of plants, and of their culture and cookery. — *Cond.*

Belfast Horticultural Society, Sept. 2. — Some splendid georginas were exhibited, and excited general admiration. Indeed, we never saw so many good flowers brought together. Considering the season, we did not expect good fruit; in this we were very agreeably disappointed. Some good pines, melons, grapes, &c., were exhibited and much admired. Among the plants we particularly noticed a very fine Fúchs*ia* grácilis, sent by Mrs. Batt, Purdy's Burn, and a splendid *Yúcca* gloriòsa, in flower, from Mr. Lindsay's nursery. The judges of flowers were, the Marchioness of Donegall, Mrs. May, and Mrs. Rowan, Merville. The judges of fruit, vegetables, &c., were, the Marquess of Donegall, John Agnew, Esq., William Sinclair, Mr. Farrell, and Mr. Scott.

Pines: 1. Mr. Milliken, Belvoir; 2. Mr. Walker, Purdy's Burn. Melons: 1. Mr. Dickson, Rosemount; 2. Mr. M'Donald, Hollywood House. Purple Grapes: 1. Mr. Walker; 2. Mr. Stewart, Mountstewart. White Grapes: 1. Mr. Walker; 2. Mr. Stewart. Peaches: 1. Mr. Cummins, Hillsborough; 2. Mr. Cummins. Nectarines: 1. Mr. Stewart; 2. Mr. Cummins. Apricots, Mr. Anderson, Lurgan House. Plums, purple, Mr. Downie, Fisherwick Lodge; green, Mr. Walker. Pears, Mr. Cummins. Apples, Mr. Cummins. Gooseberries, red, Mr. Anderson; green, Mr. Scott, Ormeau. Currants, white, Mr. Cummins; red, Mr. Scott. Celery, Mr. Anderson. Beet, Mr. Johnston, Springfield. Onions, Mr. Dickson. Cauliflower, Mr. Anderson. Best Georgina, Mr. Scott. Best 3 Georginas, John Montgomery, Esq. Best 6 Georginas, Mr. Anderson, Lurgan. Best bouquet of Georginas, Mr. M'Cullough, Comber. Six single Georginas, Mr. A. Dixon. Best bouquet of Roses, Mr. Walker.

Several gentlemen are on the list for admission: among these we noticed the member for Armagh, Charles Brownlow, Esq., who, the instant he heard of such a society being established, requested to be admitted a member. To the committee we beg to throw out a hint. One of the most useful objects such a society should have in view is tree-planting; and we would particularly impress the necessity of giving a medal or premium to the member who shall have planted the greatest number of trees within a given time. To landed proprietors, numberless spots on estates, which it is impossible to crop or cultivate, would, if carefully planted, produce in a few years valuable timber; add to this, the improved appearance the face of the country would exhibit. (*Belfast News-Letter*, Sept. 7.)

Horticultural Societies in Ireland. — Sir, Viewing with gratitude your anxious endeavours to improve the condition of gardeners, as well as to advance or promote the science of horticulture, and as in no part of the globe are both these objects so much neglected as in Ireland, a few observations to your Irish readers will not be uninteresting, particularly if accompanied by your opinion on two societies here in existence, both of which pretend to embrace the above objects in some measure.

One of these societies is termed the Horticultural Society of Ireland, and the other the Practical Horticultural Society for Ireland. The former had been established in the year 1816, on good principles, but, like most societies in this country soon became a job; and never was jobbing, in Ireland or any other country, carried on so shamefully, which can be well understood from their never having published in a satisfactory manner their proceedings. From 1820 to 1830 its members, ordinary (which consisted of gardeners) as well as honorary (which consisted of amateurs), dropped off by degrees, and at the commencement of the last-mentioned period (1830) not more than from twenty-five to thirty members were found firmly attached to it: nor would that number, if each did not consider he had sufficient influence, independently of his merit, to obtain in turn a portion of the petty prizes awarded at each exhibition; which could indeed be but trifling, having scarcely any funds to support them, save what they could collect on days of exhibition from visitors. It was up to April last conducted by a committee of gardeners, who acted in that capacity from the commencement, without a single change, except in case of a mortality, or that one of them left his situation and had gone to a remote part of the country; although it was intended at the formation of the Society, and published in their prospectus, that the committee should be annually elected.

In April last, from their poverty, together with the repeated attacks of the new Society, then becoming formidable, the committee feeling unable to bear up against both, and to guard as it were against the latter, gave the full management of the Society into the hands of a few self-styled amateurs that then belonged to the Society; who no sooner got such prerogative than they ousted the gardeners totally, allowing them no part in the proceedings but to exhibit their productions for prizes as usual. They elected a secretary, to be paid some trifling salary, who could not conduct the business of the Society without the aid of gardeners, but when this was understood by the then committee (whose objects were to keep the gardeners in the dark) they immediately discharged him, determined that they would act as such themselves, one or other in turn. The further object in view by these gentlemen of the committee was, that in a little time each would act as his own gardener; and, with the exception of one or two, none of them paid a gardener more wages than eight or ten shillings a week, with potatoes and buttermilk, and a trifle of coals, half a ton or so; and, if an unfortunate Scotchman (as unfortunate, indeed, he would be) happened to meet with one of them, he might get half-a-guinea a week, with a little oatmeal.

Now, Sir, you will not be surprised to hear that most of these horticultural planets are members of the Dublin Society, and some of them on the committee of botany there. They have not attached to their committee a man of science or intelligence in point of horticultural knowledge. They, indeed, use the name of James Townsend Mackay, Esq., who, as a man of candour, of the first-rate and most enlightened abilities, and of a judgment superior to most men of the present age, must abhor their intended proceedings as much as any man, whether English, Scotch, or Irish.

The other, or Practical Horticultural Society, as it is termed, I am not so much acquainted with, being in existence only since March last. It is composed of the gardeners who from time to time fell off from the other

Society, together with, I believe, the most intelligent young gardeners, not only in the vicinity of the metropolis, but, generally speaking, throughout the kingdom; where it is intended that branch establishments shall be formed. They say they have a library, containing all the useful works now published in the United Kingdom on horticulture and agriculture. They propose having exhibitions three or four times a year; to create emulation among the members; and on the day succeeding each exhibition to have a flower fair held in the same place, for the advantage of such nurserymen as belong to the Society, and to allow thereby a means of purchasing to amateurs. They intend taking a piece of ground, to employ thereon respectable gardeners whilst out of situation, together with superannuated gardeners that supported good characters. They intend cultivating the most profitable vegetables for market, and to collect the best kinds of fruit-trees, to enable nurserymen and their members in general to have their stocks genuine; but how far they can be relied on we can only guess hereafter. However, this much I say, I will have an eye on them as well as their neighbours; and as soon as the scent of a job appears, though stifled with all the flowers of sophistry, as well as decorated with all their garden productions, I shall extract it, and send it all soldered in a tin case to you, promising that it shall not lose in flavour, though under the influence of another atmosphere. As nothing can be so great a check on public men as public opinion, and as nowhere is that more candidly expressed than in your valuable Magazine (which is read, of course, by the members of those Societies), by giving a place to the above you will much oblige most gardeners in Ireland, as well as your humble servant. — *An Observer of Irish Jobbing. Dublin, Aug.* 1830.

Remarkable Additions to the Irish Flora. — I lately made a short tour to the wild district of Cunnamara, on the western coast, where, besides procuring plants of Eriocaùlon septangulàre, Rhynchóspora fúsca, Clàdium germánicum, and some other rare plants, I discovered *E*rìca mediterrànea growing abundantly in a bog, which I consider an important addition to our Irish flora. — *J. T. Mackay.* 5. *Cottage Terrace, Dublin, Nov.* 13. 1830.

A large Cucumber. — I observe that you have given some accounts of large cucumbers; let me give you the dimensions of one I grew last summer. Length of the fruit, 26 in.; circumference, 12 in.; size of the leaf across the bottom, near the insertion of the leaf on its footstalk, 16½ in.; across, farther up the middle, 17½ in.; from the tip of the leaf to the extreme verge of either lower lobe, 18 in. — *J. Elles. Palace Gardens, Armagh, Jan.* 5. 1831.

ART. IV. *Hints for Improvements.*

DOMESTIC Economy of the Middling Classes. — Sir, You would materially benefit an extensive class of the community, if you would suggest to your correspondents to do for them what you have recently done for the cottager. There are thousands of individuals living upon very limited incomes, who are driven to foreign countries to seek a *cheaper* subsistence than that which their own *seems* to afford them. They would be greatly assisted if a page of the Gardener's Magazine were devoted to an enquiry into the comparative cheapness of some of the counties in England and Wales. I do not know of any work which furnishes this information; and a small one, in a cheap form, is much to be desired.

I would suggest an enquiry, and a brief return, from different parts of the country, of the comparative expenses of different departments of housekeeping, such as rent, wages, coals, provisions of every kind, &c.; thus furnishing to a most respectable class of persons the means of ascertaining where they might find a refuge and a residence, without resorting to an unnatural banishment from their native land. How many hundred families are subsisting with difficulty upon incomes varying from 150*l.* to 300*l.* or 400*l.* per annum, who would be thankful for such information to guide them! The boasted cheapness of the West of England is exaggerated. Provisions are there both dear and bad. Hoping that you will not reject this request, I remain, &c. — *P. C. H. Seven Oaks, Sept.* 9. 1830.

If P. C. H. will send us his desiderata for a residence, we have little doubt some of our readers will be able to point out the most suitable district in England for supplying them. — *Cond.*

Telegraphic Communications as to coming Weather. — Sir, It has often occurred to me that a great proportion of the severe storms which visit our island proceed from south to north. I do not mean that they travel in that regular and gradual manner in which a cockney finds himself conveyed from London to some of the moors by North Killicrankie, in a stage-coach, to shoot grouse, about the 12th day of August; but rather flitting across the island in regular starts, taking in about one degree of latitude, or thereabout, at every reflux, and occupying about two days for every wave or pulsation. Assuming this theory to be correct, from eight to ten days will elapse before the horticulturists in Perthshire will be visited with the storm which may have played its part at Bayswater: and should this theory, by regular communications from some of your numerous correspondents in different parts of the island, be found entitled to rank as a well established fact, intelligence could be easily conveyed by mail or telegraph from Paris to Bayonne, London, Edinburgh, Aberdeen, and Inverness, &c., with sufficient celerity to enable every gardener and farmer to provide against the effects of the coming storm. There is a beautiful regularity in all nature's works; nor do I think the progress of storms forms an exception. I am aware that correct and regular observations require to be made and recorded for some time from different parts of the country: few have the same influence, and perhaps fewer still the same inclination, as yourself to promote investigations of this nature, and if you could prevail upon some one or other of your correspondents in the South of England to register and communicate regularly, for every Number of your Gardener's Magazine, the commencement, intenseness, and duration of storms of snow, hail, thunder, direction of the wind, fall of rain, temperature, &c., I should, if you wish it, most cheerfully contribute remarks of that nature from this quarter; and my friend Mr. Gorrie will, I doubt not, cooperate from Perthshire. This would be a beginning; and, if the coincidences recorded shall be such as I anticipate, I doubt not others will contribute towards settling the question. Sir, yours, &c. — *John Machray. Howick Garden by Alnwick, Northumberland, Aug.* 25. 1830.

A Benefit Society for Gardeners. — Some of your readers may say that we have enough of benefit societies already: I agree with them; but, in my opinion, we have none suitable for the class of men I speak of, viz. gardeners. Gardeners are seldom fixed in one situation for many years: of what use, then, is it for a gardener to enter into a benefit society in the country? Perhaps in a few years he might be two hundred miles from it: he will then either relinquish the society, or get some friend to pay the subscription for him; either of these methods is attended with inconvenience: but if a society for gardeners were established in London, as the centre, a gardener in the country would then have many opportunities of remitting his subscription, either by the family going there, friends, or nurserymen. I think it would also meet with support from many of the gardeners in and near London; I trust the nurserymen also, or at least many of them, would become honorary members, and perhaps you, Sir, would subscribe your mite. In your *Encyclopædia of Gardening* you have given some very excellent advice to gardeners, which might be applied with profit to persons in other branches; but, alas! how few of us will see the necessity (till too late) of profiting by the advice held out to us, till sickness and poverty, and a train of other evils, come on, to render any designs we might then form of no use whatever! But, to return to my subject, the forming of such a society, I think, would be productive of general good to gardeners; as to the articles, mode of subscription, the sum to be subscribed, &c., I shall leave those to some of your correspondents more capable of the task than myself; I am only sorry I cannot do justice to the case of a very deserving class of men. I further add, that I am quite disinterested, not being a gardener but an humble tradesman; and as such I subscribe myself your obedient servant, — *J. Y. Wallerton, near Arundel, Sept.* 17. 1830.

Cultivation of Mosses in Town Gardens. — If I understand you right, you wish to give a living vegetable covering to the surface of your borders and groups of shrubs; if such be your object, will you allow me to send you some few species of mosses, which I think will live well even in the smoke of London, and form under the shade of trees and shrubs a rich carpeting, which, in some cases, should probably not be removed even in summer. Many species of mosses are certainly capable of cultivation: and as they never grow into confusion, like the grasses, or like coverings of dwarf annuals; and as weeds do not appear to come up amongst them, at least so as to require much trouble to eradicate; I think very pretty borders might be made of them, particularly in small gardens. The choicer alpine plants, bulbs that do not stand our winters, and many of the North American herbaceous plants, particularly those of Canada, &c., might be preserved under such a covering, and have a good effect, as they come up in succession. Some of the mosses which I have found to succeed in cultivation are as under: —

*P*olýtrichum undulàtum.
hercýnicum.
*j*unipérinum.
commùne.
Grímm*ia* pulvinàta.
Weìss*ia* controvérsa.
Dícranum glaùcum.
flexuòsum.
*s*copàrium.
Hýpnum, many species.
Bryum, many species.

Most of these I will send you for a trial. I have made three attempts at forming a selection of these interesting but neglected plants in a cultivated state; but the changes to which gardeners are so liable has almost sickened me from making a fourth. However, if I remain long in the same way of thinking that I am in at this moment, I may have a few of them to show you the next time you favour me with a visit at C——. Very truly yours,— *C. M. Nov.* 17. 1830.

Mr. R. L. Howes of Middleton never communicated his method of managing cockscombs, as he offered to do. (Vol. IV. p. 352.) He would confer a favour by so doing. — *Wm. Stowe. Buckingham, May* 31. 1830.

Fruit Trees on Walls and in Hedges. — If all the walls of a good aspect were covered with fruit trees, the benefit would be great and the cost small. (*Ed. Rev.*, Sept. 1828.) A German writer suggests the idea of having all hedges of fruit shrubs, and all hedge-row trees fruit trees; and a gardener in the *Caledonian Horticultural Society's Memoirs* recommends cultivating flax in flower-borders, and afterwards preparing it for spinning, as another has recommended growing the sunflower for its seeds to be crushed for oil.—*Cond.*

Experimental Farm. — Nothing surprises me more than the want of an experimental farm in England. It seems to me passing strange that this question, so important to the agricultural interest, and fraught with such vast advantages to our native weal, should not have been discovered long ago by some of our highly respectable agrarian societies, the Bath adn West of England Agricultural Society, or the Highland Society of Scotland, for instance. We have our experimental gardens for the advancement of horticultural science; but what is this compared with agriculture in a national point of view? Dust in the balance. The experimental farm at Padua is a most interesting spot, and many curious and important facts have emanated thence. Not long ago I had much pleasing conversation with that veteran agriculturist Sir John Sinclair; and this question I particularly urged: but he does not now take an active part in the business of the Highland Society; and my principal object was the result of some experiments I had made with the *Phórmium* tènax, and the cultivation of the *Dípsacus* fullònum, or fullers' teasel. — *J. Murray. Carmarthen, April* 2. 1830.

If experimental farms were, in their nature, good for much, we suspect it would not be a question of doubt at this time of day. We should like to be made acquainted, by our much esteemed correspondent, with some of the useful facts which have emanated from the experimental farm at Padua, or indeed from any other farm in any other country. However, by all means let us have an experimental farm: the rich may spend their means at least as well in that way as in any other. — *Cond.*

Exhibitions of Foreign and Domestic Animals. — Sir, As the public much approves of exhibitions of animals, would it be a useless plan for some of our agricultural societies to adopt an established show of foreign domestic animals suited to each county? For example: Yorkshire to adopt the horse; Cornwall the ass, as it sends mules to the West Indies; the coal districts the same animal, as great numbers are employed by the retail dealers; Herefordshire, horned cattle; Wiltshire, the sheep; Wales, the goat, an animal frequently taken to sea for the sake of its milk, and kept in stable yards for the benefit horses receive from the smell of them; Berkshire and Hampshire, swine. It was by the introduction of foreign horses that we were enabled to boast of the superior excellence of ours; and, no doubt, inattention to the original stock will diminish their value. — *J. M. June,* 1830.

Art. V. *Lists of the finest Varieties of Hardy Fruit Trees and Shrubs recommended for Cultivation in a select Garden, in the Midland or Southern Counties of England.* Copied from the third and concluding Volume of the *Pomological Magazine.*

Of these Lists it is observed by the editor of the *Pomological Magazine* (Pref., p. v.), that, being "only formed for select gardens," all doubtful or second-hand varieties are excluded. It will be found that a great many common varieties are also omitted: this has always been done advisedly, and because newly raised kinds ought to displace them. For instance, among cherries, not a single "Heart" is quoted, because the Elton of Mr. Knight is much superior to them all. It is possible that persons in trade may say that varieties have been introduced which are inferior to others more commonly cultivated for sale, and even that many are not to be procured. To enter into separate arguments upon all such questions would be equally useless and unsatisfactory. In making the selection, no other object has been had in view than the public service; it is founded upon the experience, not only of the editor, but of the most competent judges of fruit in this country; and it will be for the public to decide in whom they will place their confidence. It may only be observed, that a nurseryman's not possessing a variety is no proof that it is undeserving the character that may be given of it, although it may be an evidence of his own want of enterprise; and further, that no sort whatever is mentioned in the following Lists which it is not in the power of any person to procure with proper enquiry.

The figures refer to the plates in the *Pomological Magazine*.

I. APPLES.

Court of Wick. Dessert; winter and spring. 32.
Cornish Gilliflower. Dessert; winter and spring; bad bearer, but very rich and any thing but handsome. 140.
Ribston Pippin. Dessert and kitchen; winter. 146.
Old Nonpareil. Dessert; winter and spring. 86.
Scarlet Nonpareil. Dessert; winter and spring. 87.
Travers Pippin. Dessert and kitchen; autumn and winter. 67.
Norfolk Beaufin. Kitchen; spring; excellent for drying.
Canadian Reinette. Dessert and kitchen; winter and spring; very fine. 77.
Golden Reinette. Dessert; autumn. 69.
Dutch Mignonne. Dessert; spring. 84.
Boston Russet. Dessert; spring.
Juneating. Dessert; July.
Early Red Margaret. Dessert; July. 46.
Golden Harvey. Dessert; winter and spring. 39.
Franklin's Golden Pippin. Dessert; autumn. 137.
Grey French Reinette. Dessert and kitchen; winter and spring. 152.
Hubbard's Pearmain. Dessert; winter and spring. 27.

The specimen figured in the *Pomological Magazine* was taken off an old tree in the botanic garden, Bury St. Edmund's: and however accurate the name of Hubbard's Pearmain may be, it is right to remark that this is the apple very generally known in Suffolk and Norfolk by the name of Hammond's Pearmain. In the above places it is an old, favourite, and highly prized variety. — *J. D.*

Adam's Pearmain. Dessert; winter and spring. 133.
Newtown Pippin. Dessert and kitchen; spring; tender; requires a wooden frame or an east wall.
Sweeny Nonpareil. Dessert; winter and spring.
Cockle Pippin. Dessert; spring. 136.
Kerry Pippin. Dessert; August and September. 107.
Oslin. Dessert; September. 5.
Blenheim Pippin. Dessert and kitchen; autumn. 28.
Duchess of Oldenburgh. Dessert; September, October.
Male Carle. Dessert; spring; very tender; requires a south wall.
Sykehouse Russet. Dessert; winter and spring. 81.
Royal Russet. Kitchen; winter and spring. 125.
Brabant Bellefleur. Kitchen; winter and spring.
Beachamwell Seedling. Dessert; winter and spring. 82.
Court-pendu. Dessert; spring. 66.
Wormsley Pippin. Dessert and kitchen; autumn. 80.
Hawthornden. Kitchen; autumn. 34.
Sugarloaf Pippin. Dessert; July. 3.
Downton Pippin. Dessert; winter. 113.
Gravenstein. Dessert and kitchen; autumn. 98.
King of the Pippins. Dessert and kitchen; autumn. 117.
Sam Young. Dessert; winter. 130.
Alfreston. Kitchen; winter and spring; very large.
London Pippin. Kitchen; winter and spring.
Bedfordshire Foundling. Kitchen; autumn and winter.
Northern Greening. Kitchen; winter and spring.
Minshull Crab. Kitchen; winter.
Rhode Island Greening. Kitchen; winter and spring.

Beauty of Kent. Kitchen; autumn and winter.
Lucombe's Seedling. Kitchen; winter. 109.
Gloria Mundi. Kitchen; autumn and winter.
French Crab. Kitchen; spring and summer; will keep two years.
Winter Codlin. Kitchen; winter.
Manks Codlin. Kitchen; September.
Golden Pippin. Dessert; winter and spring.
Dumelow's Seedling. Kitchen; winter and spring.

II. APRICOTS.

Hemskirke. Dessert; wall; end of July. 11.
Royal. Dessert; wall; end of August. 2.
Large Early. Dessert; wall; middle of July; the best early apricot. 142.
Breda. Dessert and preserving; standard; August. 146.
Moorpark. Dessert and preserving; wall; August.
Brussels. Preserving; standard; beginning of August; good bearer.
Orange. Preserving; wall; a clingstone; August.
Turkey. Dessert; wall; late in August. 25.

III. CHERRIES.

Belle de Choisy. Standard; beginning of July; moderate bearer. 42.
Black Tartarian. Wall; June, July. 44.
Late Duke. Standard; August; great bearer. 45.
Elton. Wall and standard; beginning of July; the finest pale cherry yet known.
Knight's Early Black. Wall; June. 93.
Black Eagle. Wall and standard; July; good bearer. 127.
Downton. Wall and standard; July. 138.
Waterloo. Wall and standard; beginning of July. 115.
Morello. Standard and north wall; late; preserving.
May Duke. Wall and standard; end of June.
Purple Griotte. Wall and standard; beginning of June. The finest early cherry.
Kentish or Flemish. Standard; July; preserving and kitchen use; great bearer.
Florence. Wall; late.
Bigarreau. Standard; late.

IV. CURRANTS.

Black Naples. 43.
White Dutch.
Red Dutch.

V. GOOSEBERRIES.

Red.

Boardman's British Crown; large.
Roaring Lion. Large; late.
Red Warrington. Large; late.
Red Champagne. Small.
Small Dark Rough Red. Small.
Early Black. Small.

White.

White Crystal. Small.
White Champagne. Small.
Crompton's Sheba Queen. Large. 12.
Woodward's Whitesmith. Large.

Green.

Massey's Heart of Oak. Large.
Edwards's Jolly Tar. Large.
Pitmaston Green Gage. Small.
Early Green Hairy. Small. 22.

Yellow.

Prophet's Rockwood. Large.
Haywood's Invincible. Large.
Yellow Champagne. Small.
Rumbullion. Small.

VI. NECTARINES.

White. Beginning of September; freestone; rather tender. 40.

Elruge. Beginning of September; freestone; good bearer and forcer. Rich; altogether the finest known. 49.

Violet. Beginning of September; freestone; good bearer and forcer. 68.

Pitmaston Orange. Beginning of September; freestone; good bearer.

Old Newington. Middle of September; clingstone.

VII. NUTS.

Cosford. 55.
Frizzled Filbert. A good bearer.
Cob Nut.
Red Filbert. A bad bearer.
Spanish Nut.
Pearson's Prolific. A great bearer.
Knight's Large. Very fine.

VIII. PEACHES.

Royal George. Beginning of September; freestone; forces well. 119.

Madeleine de Courson. Beginning of September; freestone. 30.

Noblesse. September; freestone. 95.

Early Anne. Middle of August; freestone.

Grosse Mignonne. End of August; freestone; forces well. 23.

Bellegarde. Middle of September; freestone; large and excellent; forces well. 26.

Barrington. Succeeds the Royal George; freestone; forces well. 147.

Chancellor. Middle of September; freestone. 61.

Royal. End of September; freestone; the finest late sort. 73.

IX. PEARS.

Beurré Diel. Dessert standard; October and November; a great bearer, and excellent. 19. and 131.

Gansel's Bergamot. Dessert; east and west wall; October; indifferent bearer. 35.

Beurré Rance. Dessert; standard; March and May; the best late melting pear yet known. 88.

Beurré d'Aremberg. Dessert; wall and standard; December. 83.

Capiaumont. Dessert; standard; October; great bearer. 59.

Duchesse d'Angoulême. Dessert; wall and standard; October and November. 76.

Easter Beurré. Dessert; wall and standard; January, February, and March; great bearer, and excellent. 78.

Napoleon. Dessert; wall and standard; November. 75.

Passe Colmar. Dessert; wall and standard; December and January; great bearer. Trees not subject to canker, like the Old Colmar; excellent. 64.

White Doyenné. Dessert; wall and standard; October; good bearer. 60.

Aston Town. Dessert; standard; October and November. 139.

Autumn Bergamot. Dessert; October. 120.

Bezi de la Motte. Wall and standard; October. 143.

Early Bergamot. Dessert; standard; August, September; good bearer. 101.

Flemish Beauty. Dessert; standard; October, November; must be gathered early. 128.

Forelle. Dessert; wall and standard; November, December. 112.

Jargonelle. Dessert; wall or quenouille; August. 108.

Marie Louise. Dessert; standard; October. 122.
Summer Franc-Réal. Dessert; standard; August, September; good bearer. 106.
Winter Neilis. Dessert; wall; December; excellent. 126.
Chaumontelle. Dessert; wall, standard, or quenouille. Succeeds well on quince, and trained in the latter mode; winter.
Brown Beurré. Dessert; wall; October.
Colmar. Dessert; wall; December till March; trees subject to canker.
Crassane. Dessert; wall; October, November; shy bearer.
Hacon's Incomparable. Dessert; standard; November, December; tree hardy; great bearer; delicious.
Whitfield Dessert. Standard; November; good bearer.
Thompson's Dessert. Standard; November; one of the finest Flemish pears; good bearer.
Madeleine. Dessert; standard; end of July; good bearer. 51.
Seckle. Dessert; wall and standard; October; abundant bearer.
Vallée Franche. Dessert; standard; August, September; abundant bearer.
Swan's Egg. Dessert; standard; November, December.
Passans de Portugal. Dessert; standard; August; good bearer.
Easter Bergamot. Dessert and kitchen; wall; March, April, and May.
Bezi d'Héri. Stewing; standard; winter; good bearer.
Chaptal. Stewing; standard; winter and spring.
Bequêne Musqué. Stewing; standard; winter; great bearer.
Franc-Réal d'Hiver. Stewing; standard; winter.
Uvedale's St. Germain. Stewing; wall; very large.
Calebasse Bosc. Dessert; standard; November.
Nutmeg. Dessert; standard; winter; small, but handsome, and a good bearer.
Rousselet de Rheims. For drying.
Ne Plus Meuris. Dessert; standard; January till March; good bearer.

X. PINES.

Queen. Enville. Providence. Black Jamaica. Antigua Queen.

XI. PLUMS.

Coe's Golden Drop. Standard and wall; October. Dessert; great bearer; dries; delicious. 57.
Impératrice, Blue. East or west wall; October; dessert. 33.
Mimms. Wall; August, September; dessert and kitchen. 6.
Washington. Wall and standard; September; dessert. 16.
White Impératrice. Wall; September; dessert; tender. 38.
Nectarine. Wall and standard; beginning of September; dessert. 148.
Kirke's. Wall; September; dessert. 111.
Isabella. Wall and standard; September; dessert. 150.
Purple Gage. Wall and standard; September and October; dessert; good bearer; the finest dessert plum of its colour. 129.
Green Gage. Wall and standard; August, September; dessert; preserving; excellence well known.
White Magnum Bonum. Wall and standard; September; kitchen.
Drap d'Or. Wall and standard. Earlier than the Green Gage, and precociously supplies its place for dessert; a good bearer.
Catherine. Wall and standard; end of September; preserving and dessert.
Gisborne's. August; kitchen; standard; forces well; good bearer.
Orleans. Standard; August; kitchen; good bearer.
Early Orleans. Standard; beginning of August; kitchen; good bearer.
Little Mirabelle. Wall and standard; September; small, but excellent for preserving; great bearer.

White Damson. Standard; end of September; preserving.
Shropshire Damson. Standard; September and October; preserving; great bearer.
Bullace. Standard; October, November; kitchen; great bearer.
Winesour. Standard; October; preserving.

XII. RASPBERRIES.

Barnet. 8.
Bromley Hill.
Red Antwerp. 24.
Double bearing.
Yellow Antwerp.

XIII. STRAWBERRIES.

Downton. 52.
Keen's Seedling. 91.
Black Roseberry. 20.
Grove End Scarlet. 7.
Old Pine. 47.
Sweet Cone. 4.
Roseberry.
Elton Seedling. 135.
Duke of Kent's Scarlet. Earliest of all.
Old Scarlet. Valuable only for preserving.
Alpine, Red and White.
Prolific Hautbois. 31.
Large flat Hautbois.

XIV. VINES.

For the open Wall.

Black July.
Miller's Burgundy. 56.
White Sweetwater.
Grove End Sweetwater.
Common Muscadine. 18.
Pitmaston White Cluster.
Cambridge Botanic Garden. 21. [This kind will also not be out of place in a vinery.]
Esperione. Sometimes ripens pretty well.
Chasselas Musqué.

For a Vinery.

Black Hamburgh.
White Frontignac.
Black Frontignac.
Muscat of Alexandria, White.
Verdelho, White.
West's St. Peter's, Black.
Horsforth Seedling, Black. 149.
Black, or Morocco.
Poonah, Black.
Royal Muscadine, White.
Black Damascus.
White Sweetwater.
Grove End Sweetwater, White.

ART. VI. *Retrospective Criticism.*

ERRATA.—In Vol. V. p. 680. for "Parfaite" read "Birthwaite."—*A. G. Near Barnsley, Nov.* 1830.

In Vol. VI. you announce the death of Mr. Rigg and family. Mr. Rigg was not of the party.—*J. W. H. Wooler, Nov.* 18. 1830.

A Lecture to the Conductor.—Sir, The singularly liberal and candid manner in which you not only receive but promulgate reflections and criticisms on your public capacity as Conductor of the Gardener's Magazine, encourages me to hope that you will pardon me if I suggest one or two improvements, which I think might be made in that valuable work. Napoleon designated us, you well remember, as a "nation of shopkeepers:" had he called us a "nation of gardeners," he had probably characterised us with much greater truth. The avidity with which we cultivate every yard of ground contiguous to our cities and large towns appears to justify the assertion; even the flower-pots which decorate the upper windows in "our good city of London," much as they may endanger the heads of passing travellers, tend to corroborate our character. But, Sir, if a nation of gardeners, we are by no means a nation of scientific gardeners; and the question is, to what description of readers your work may be considered as most particularly applicable? If it be meant for the use of the higher branches of the profession, as noblemen or gentlemen's gardeners, I submit that this class of readers are few in themselves, and generally well informed on all their different departments; indeed, the situations they hold appear to presuppose this, so that it is only on some nice points of criticism that your work can be useful even to them. And if it be meant for the generality of amateur gardeners, who perhaps hardly ever heard of Linnæus, or any of his hard names, why, Sir, to this, and (allow me to say this is, or ought to be, by far the largest portion of your readers) yours is, in a great part of it, a "sealed book." We sometimes read without satisfaction or improvement, and the small space allotted to "queries and answers" is all that is intelligible to us. I may be wrong, but I conceive the Gardener's Magazine should be written for the instruction and amusement of the *many*, not the scientific *few*. If I am right, you will readily perceive how large a portion of your late Numbers are perfectly incomprehensible to them. This is a letter of reproof, so one word as to your communications relative to the Horticultural Society in London. My good Sir, what possible interest can your readers have in being told that Mr. A. sent a paper on raising apple trees from pips; Mr. B. presented fourteen sorts of cardoons and nine sorts of celery; or Mr. C. one on the cultivation of mushrooms? Unless you can give us some *practical information* from the works of the Society, do fill your pages with something more useful, instructive, or amusing. Perhaps you will think I have lectured enough for one letter.—*J. M. Sussex, April*, 1830.

The Botanical Register.— Sir, In the number of the *Botanical Register* for January I observe a note signed J. L., in which the writer defends the editor of that work against the charge made against him of frequently publishing the same plants which have before appeared in other works. Having been myself one of those that joined in making this complaint (Vol. VI. p. 721.), I think it but justice to say that the writer of the note has, as it appears to me, made out such a case in defence of the practice, that I for one (though a subscriber to the *Botanical Magazine* as well as to the *Register*) am ready to absolve the editor of this charge. The evil, if evil it is, appears to be in some degree absolutely unavoidable; and if one portion of the public are losers, another (and that, it seems, the more numerous of the two) are gainers by the practice. But the most serious charge against the *Register*, viz. "the imposition of an additional shilling for a single leaf of index at the end of every twelve numbers," still remains unanswered, and is passed over on this occasion in utter silence. Not a syllable is said about this twelvepenny worth of index, miscalled appendix, although the publication of the note in the last number of the *Register*, in answer to one charge, would seem to have afforded a fair opportunity for replying to the other also, and that by far the more serious charge of the two. I trust, however, that it is the intention of the editor at once to discontinue this mean underhand practice, or at least to offer some explanation or apology to the public for not doing so. Yours, &c.—*A Subscriber to the Botanical Register. Jan.* 3. 1831.

The Literal Translation of Botanical Names, &c.— I wish to say that I quite agree with you in reprobating the great want of attention, in the generality of botanical authors, to making the English name a more literal translation of the Linnean. I find even Dr. Hooker frequently committing himself in this way; for instance, in the *Botanical Magazine* for September last, he gives us Anthéricum bulbòsum, Bulbous-rooted Lancashire Asphodel. Would not any one suppose from that name that it was a native of

Lancashire? How Dr. Hooker can reconcile himself to call a plant from New South Wales by such a name, being not even of the same genus with the Lancashire asphodel, I am quite at a loss to know. I should have thought Bulbous-rooted Anthericum would have been much more correct. In the next place, in the preface to your *Hórtus Británnicus* you say that, from the improvements you have introduced in your catalogue, it almost answers the purpose of a Spècies Plantàrum. I certainly have no hesitation in saying that I think it the best catalogue yet published; but there is a growing evil amongst botanists, or rather those who take upon themselves the work of naming plants, which your improvements do not reach, and from the great increase of the practice, it, in my opinion, threatens great confusion in the nomenclature of plants. I allude to the practice of making use of persons' names for specific names of plants. I like well the idea of noticing particular individuals who have shown themselves ardent in their pursuits, whether in botany, entomology, or any other subject of natural history, but I think new genera would be much more proper to take advantage of for the purpose; and, no doubt, opportunities enough occur of new genera in any of the sciences, but more particularly in botany. I make these remarks from (as I have before stated) the increasing practice of complimenting eminent men in this way; and from its tendency, according to my views, to introduce unnecessary difficulties in the study. I am of opinion that specific names ought to be taken from some prominent feature in the plant. I think there are few plants in which some distinct feature may not be found, and an applicable specific name agreeing with it. Allow me to mention one individual instance, and I have done. In the same number of the *Botanical Magazine* I have alluded to before we have Lobèl*ia* Kraússii, which I think has several legible characters about it, such as pedunculàta, xylophyllöìdes, or even serràta. If this were more particularly attended to, a good catalogue might then be said to supersede the more elaborate work of a Spècies Plantàrum. But I fear I shall exhaust your patience; and, instead of the old phrase, *multum in parvo*, being applicable to my epistle, you may think (if I may be allowed the expression without being thought to be an Irish instead of a Lancashire weaver) that *parvum in multo* would be much more applicable. I am, Sir, &c. — *A Member of the Bury Botanical Society. Bury, Lancashire, Nov.* 15. 1830.

Linnæus, and the genus Valántia. — In glancing over your *Encyclopædia of Plants*, I find an observation under the genus Valánt*ia* (p. 862.) which must be considered a satire, and in my opinion an undeserved one, on the memory of Linnæus. I am willing, however, to believe that you have published it under the impression of its correctness, and that you would be pleased, rather than offended, if it could be proved to your satisfaction to be incorrect. It is under this impression that I send you the following observations: —

The passage in the *Encyclopædia* to which I allude is this: — "The author of the name would have employed his time better in considering the botanical writings of Vaillant, than in identifying with the most worthless part of vegetation an author whose merits he was unable to understand. No man was more given to sneers of this kind than Linnæus, and yet his followers manifest a most extraordinary degree of sensitiveness whenever he has been retorted upon in a similar way; although few ever deserved criticism in some things in a higher degree than himself." Here are three charges against Linnæus, the incorrectness of which it shall be my business to prove: viz. 1st, That by giving the name of Vaillant to a genus of "worthless weeds," he meant to cast disrespect on his memory; 2dly, That Linnæus was unable to understand the writings of Vaillant; and 3dly, "That no man was more given to sneers of this kind than *Linnæus*."

To proceed to the first charge, I cannot admit that the species of Valántia are the most worthless part of vegetation, nor even that they are "miserable weeds of no beauty." To be sure they cannot be compared with Strelítz*ia*, Magnòl*ia*, or *N*ymphæ`a; but then, are they not preferable to several of the *C*henopòdeæ? Are they less "worthless" than Vauchèr*ia*? Yet that genus was named "in honour of M. Vaucher," to use your own words.

Yet, granting (as beauty is all matter of taste) that the Valánt*iæ* are "miserable weeds," does it follow from that that the name was conferred sneeringly, rather than in honour of Vaillant? You tell us (*Encyc. of Plants*, p. 629.) that the Smíth*iæ* are "inconspicuous worthless weeds;" was it then in disrespect that Salisbury inscribed that genus? Will posterity say that he would have employed his time better in turning over the leaves of the *English Botany;* or in studying the species of *S*àlix? If then the conduct of Salisbury was pure, be just to the memory of Linnæus, and acknowledge that his intentions might have been equally so; remember that the Linnæ`*a* is not a gorgeous lily, or a spreading palm, but an humble, trailing, northern plant, conspicuous only by the name it bears; remember that Hookèr*ia* is a moss, and Borrèr*a* a lichen.

Having thus, I trust, made it clear that even an inconspicuous genus is sometimes honourable, I shall proceed to the second charge, that Linnæus was unable to understand the writings of Vaillant; and on this head I am delighted to say that I have his own incontrovertible testimony in my favour. In the Linnean correspondence, published by Sir J. E. Smith in 1821, Linnæus (vol. ii. p. 277.), in a letter to Haller, thus expresses himself. I shall give the passage in full, as it gives ample proof, not only of Linnæus's powers of comprehending the writings of Vaillant, but also of his impartiality: —

"Jussieu is my friend, and so is Dillenius. I had never any acquaintance with Vaillant. He was a man full of himself, ambitious of raising his own fame on the overthrow of his teacher, the excellent and honourable Tournefort. Vaillant was merely demonstrator in the Paris garden, and rude in literature. He set himself up against Jussieu, and once laughed Dillenius to scorn. He was poor, &c. All this is nothing to me: I wish to be a just and reasonable man, as well as a botanist. I confess I never yet read any writer who was more accurate than Vaillant, who made more discoveries in botany, who laboured harder, or reaped a more sparing reward. Is a man to be handed down to posterity as a scoundrel, a madman, or the most stupid of all mortals, merely because he has pursued, honoured, and laboured to improve botany? Jussieu, as I am informed, has solemnly sworn hostility to the memory of Vaillant during his own life; nor is Dillenius content with the numerous cavils with which he has insulted his manes in the *Hórtus Elthaménsis.* Admit that Vaillant has his faults in synonymes, and perhaps other respects: who has ever been free from botanical error? He is a wise man who can distinguish good from evil; and that general may be esteemed happy who conquers and disperses his enemies with the loss of half his own forces. Who is more meritorious in exotic plants, though not systematic, than Plukenet; but who was ever more unprincipled, more of a heretic in botany, or a greater scandal to our science, than either Plukenet or Vaillant? If the authority of the *Hórtus Elthaménsis* is to be followed, I should have nothing to do with Vaillant, nor against him. But an honest man ought to do justice to every one's deserts. If you give due praise to Vaillant, posterity will be just to your memory. In this respect I care not for a Jussieu or a Dillenius."

Again, at page 284.

"With regard to Vaillant, I never yet met with any body more sagacious as to genera than he was, and I am daily sensible of this."

These passages require no comment, they speak for themselves.

As to the third charge, which says "that no man was more given to sneers of this kind than Linnæus," I need not say much, as I do not know that any instance can be proved, except it be Bufònia, in framing which name he is said to have maliciously omitted an f: and who will deny that Buffon was in many things "a toad-eater?" For this single peccadillo, shall it be said that no man was more given to such faults? It is surely too sweeping an expression. — *Q. E. D. Limerick, November*, 1830.

The author does not seem to be aware that Mr. Salisbury declared, after he had quarrelled with Sir James Smith, that he had recorded in the Smíth*ia* sensitìva the peculiar irritability of the President of the Linnean Society. The passage as to Vaillant was introduced by Mr. Lindley, to whom we shall be happy to afford space to vindicate himself, should he think it necessary so to do. — *Cond.*

Mr. Thompson's Physiological Experiments. — Sir, In your valuable Magazine (Vol. V. p. 253—257.) are some physiological botanical experiments on vines. It is a laudable amusement; yet I think Mr. Thompson sets out under a mistaken notion of the motion of the sap (p. 253.). He says, the top buds vegetated the thirteenth day, and, by wounding the bark, he discovered the descent of the sap; but the vines sickened, and the roots produced new shoots. Now, Sir, it is my opinion the sap in the vine was forced into motion, whilst the root was dormant in the cold prison of a pot. It is my opinion, also, that the cause of the failure was owing to the want of heat at the root.

He found (p. 254.) the sap descend regularly, until it got to the front wall, but it took four days more time to descend than it did over the same length in the warmer climate; and it bled freely at the surface of the soil. Is not this proving a non-circulation of the sap in trees? as it appears by the watery effusion, or bleeding at the root, whilst the head was dry. Allow me to ask, whether this bleeding was from the roots or branches: if it did not come from the roots, how or whence came the second vegetation? (p. 255.) These remarks are valuable proofs that the sap in the tops of trees can be excited independently of the roots or stem. At the same time, the birch and vine (p. 256.) prove a non-circulation of sap, by the former experiments, and the free quick vegetation of the latter when the sap was excited in roots and branches at the same time.

In p. 257. he again adverts to his mistaken idea of the sap resting in the young wood; not reflecting that the sap in the delicate young shoots is not only nearest to the sun, but the sap in them is put in motion by less heat. He notices a mucilaginous matter (p. 256.), but without making any comment. I am, Sir, &c. — *A. S. May*, 1830.

Further Remarks. This is the most interesting subject in nature. Mr. Thompson quotes Miller's *Dictionary* on peach trees being planted too deep; for, the sap in the branches being put into motion in spring, its strength is exhausted before the sun can affect the roots to put the sap of them into motion, which causes the bloom to fall and the shoots to languish. This is precisely the case with his vines. (p. 254.) Does not this prove that frequently digging fruit-tree borders destroys all the roots that are near the surface, which paralyses deep planting? He says Mitchell's *Dendrològia* denies any circulation of sap. On your recommendation I purchased that work, and by it I am his proselyte. I wish he had commented upon it; I should like his opinion. In p. 258. he has drawn freely upon the *Dendrològia*, p. 143. 147. 157. and 162. It goes deeper into vegetative motion of sap than any other work I ever saw. In Vol. V. p. 421., the American Arborator, like Mr. Evelyn, has fallen into a mistake about the succession of trees to compose new natural woods of beech after oak. I find this phenomenon accounted for by Mitchell, p. 73. I hope this will be a stimulus to such laudable exertions as those of Mr. Thompson, and to the powerful pen of Mr. Main, and arrest the attention of other able horticulturists, who would reflect and throw new light upon each other's ideas as to the motion of sap. Yours, truly. — *A. S. sen. May*, 1830.

The Strawberry Wall. — In your Magazine (Vol. V. p. 438.) is an excellent plan for growing strawberries clean and high flavoured. Plain tiles, with the corners chopped off to let the plants through, I consider less costly than stone, at least in the south. In Vol. V. p. 581. you give us a description of Westdean House and garden; I regret you did not treat us with an account of the parapets and garden wall copings of cement, and how they have stood the weather. — *Id.*

Tyso's Method of raising Ranunculuses. — If the system there pointed out were to be generally followed, a most splendid addition might confidently be expected ere long to the present stock, there being no limits to its varieties. Mr. Tyso does not, however, follow up the system to the perfection of which it is capable. He states that it is necessary to have a bed of semidoubles, as double flowers produce no anthers. Now, double ranunculuses (at least flowers as double as any that produce pericardiums, perfect doubles producing neither the one nor the other) do not unfrequently produce anthers, although in very limited numbers. In the summer of 1829 I succeeded in obtaining the finest well-filled seed from Thomson's Queen, impregnated by a flower as double as itself; and last summer I had additional proof of the anthers of such flowers being quite efficient for the purpose, the above being the first time I ever obtained seed in this way. There has not been time of course to ascertain its worth, but the experiments which Mr. Tyso has so skilfully and successfully conducted leave little doubt of its value. The chance of success, however, is much less in impregnating by doubles than by semidoubles: because the anthers in the former are so few, that, if the operation be not performed very soon after the pollen makes its appearance, the opportunity is lost; whereas, in the latter, there is not only a much greater number, but also a succession on their coming to maturity. — *James Reid. Bruvefield, near Dunfermline, Nov.* 8. 1830.

Cow Cabbage. — Your correspondent M. H. is deceived in considering the cow cabbage or Cesarean kail to be the Anjou cabbage. A specimen of the former would convince him of his error. — *Bernard Saunders. Nursery, Jersey, Nov.* 1. 1830.

Art. VII. *Queries and Answers.*

Greenish black-marked Caterpillars on Cabbages. — In your last Number (Vol. VI. p. 477.) Mr. Thomas Morgan puts a question concerning a "number of minute eggs" enveloped in a silky substance, and apparently produced by "the greenish and black-marked worms found on cabbages." Presuming that by "the worms" described he means the caterpillars of Póntia brássicæ (large garden white butterfly), which I have no doubt are what he alludes to, I feel no hesitation in referring "the minute eggs" to the pupæ of a well-known small parasite called Microgáster glomerätus (*I*chneùmon glomerätus of Linnæus), of whose operations I extract the following account from *Insect Transformations*, p. 61, 62., where a figure of the insect will be found in its different states, together with that of the caterpillar on which it preys. The insect has also already been figured in your *Magazine of Natural History* (vol. iii. p. 52.) under the erroneous name of Platygáster ovulòrum.* "It must have occurred to the least attentive observers of the very common cabbage caterpillar (Póntia bràssicæ) that when it ceases to feed, and leaves its native cabbage to creep up walls and palings, it is often transformed into a group of little balls of silk, of a fine texture, and a beautiful canary yellow colour; from each of which there issues, in process of time, a small four-winged fly (Microgáster glomeràtus *Spinola*), of a black colour, except the legs, which are yellow. By breeding these flies in a state of confinement, and introducing to them some cabbage caterpillars, their proceedings in depositing their eggs may be observed. We have more than once seen one of these little flies select a caterpillar, and perch upon its back, holding her ovipositor ready brandished to plunge between the rings which she seems to prefer. When she has thus begun laying her eggs, she does not readily take alarm; but, as Réaumur justly remarks, will permit an observer to approach her with a magnifying glass of a very short focus. Having deposited one egg, she withdraws her ovipositor, and again plunges it with another egg into a different part of the body of the caterpillar, till she has laid in all about thirty eggs. It is not a little remarkable that the poor caterpillar, whose body is thus pierced with so many wounds, seems to bear it very patiently, and does not turn upon the fly, as he would be certain to do upon another caterpillar should it venture to pinch him; a circumstance by no means unusual. Sometimes, indeed, he gives a slight jerk; but the fly does not appear to be at all incommoded by the intimation that her presence is disagreeable.

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* See Vol. III. p. 452.

" The eggs, it may be remarked, are thrust sufficiently deep to prevent their being thrown off when the caterpillar casts its skin; and, being in due time hatched, the grubs feed in concert on the living body of the caterpillar. The most wonderful circumstance, indeed, of the whole phenomenon, is the instinct with which the grubs are evidently guided to avoid devouring any vital part, so that they may not kill the caterpillar, as in that case it would be useless to them for food. When full grown, they even eat their way through the skin of the caterpillar without killing it; though it generally dies in a few days, without moving far from the place where the grubs have spun their group of silken cocoons in which to pass the winter."

The above insect has long ago been described and figured by Albin, in his *History of English Insects*, plate 1.; which figure also has been in part exactly copied by Wilkes in his *English Moths and Butterflies* (see his plate of the large garden white butterfly). As the Microgáster is the destroyer of that " pest of gardens " Póntia brássicæ, it may be considered a beneficial insect.

Very many other lepidopterous larvæ are subject to be preyed upon by parasites analogous to Microgáster glomeràtus, and thus occasionally cause no small disappointment to the breeders of insects, who instead of seeing a brilliant butterfly proceed from a chrysalis, as they naturally expected, are presented in its room with a number of small flies. I once fed in confinement a caterpillar of Lasiocámpa quércus *Stephens*, large eggar moth, which, after having spun its cocoon, and changed to a pupa, in due time produced a host of small ichneumons, with long ovipositors, somewhat resembling *I*chneùmon manifestàtor in miniature. The generation of these parasites was a subject which seems to have greatly perplexed our earlier entomologists: " mira imo vix credibilia aut ante audita [*], " are the words of Joannes Goedartius, in reference to the above Microgáster; and after mentioning the case of a second and still different parasite, which he reared from the same species of the cabbage butterfly, he thus expresses his astonish-

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[*] " Wonderful things, nay scarce credible or before heard of."

ment: — "Hæc ipse expertus sum, et non sine admiratione observavi; quia præter, imo contra consuetum naturæ ordinem esse videtur, ex uno eodemque animali, diversæ speciei prolem generari; atque unum idemque brutum, tribus diversis modis procreare; quæ tamen in his erucis, ex iis quæ breviter enarravi, manifesta sunt." * (See *Goedartii Metamorphosis*, *Exper.* xi.) Your correspondent, therefore, it appears, is not the first person who has been amazed and puzzled by the production of parasites from lepidopterous larvæ, though the natural history of these insects is now understood by all who have paid the least attention to the subject. See also *Insect Transformations*, p. 59, 60., for information on the opinions of the earlier naturalists. Yours, &c. — *W. T. Bree. Allesley Rectory, Sept.* 20. 1830.

Public Walks of Armagh. — I saw lately in an Irish newspaper some allusion to certain very beautiful public walks near that city, said to be laid out at the expense of a private individual residing in the neighbourhood. As you seem to have the celebrated Mr. Ensor, Mr. Elles, and others, as correspondents in that part of Ireland, perhaps you could through them give some account of the walks in question. — *J. C. D. Dec.* 15. 1830.

How to manage Georgina Cuttings. — I should feel much obliged to any of your correspondents who would favour me with the management of georgina cuttings. They are a family of plants which, in my opinion, are worth the particular attention of every one who has any taste whatever for the richness of a flower-garden; and, as your pages are open alike for the improvement of the skilful and the unskilful, I hope I shall not be considered intruding with this request. I should like to know which is the best method of striking late cuttings, and keeping them through the winter. I have put in cuttings in the spring in the border, which have grown and flowered in the autumn; and I have also put cuttings in pots in the middle of September, which are now (November) only beginning to form their callosities: I am at a loss to know whether they would be best kept through the winter in a cold frame, green-house, or stove.

Thunbérgia aláta. I should also like to know the best time of year to strike cuttings of the Thunbérg*ia* alàta, and how to ripen its seed? I remain, Sir, &c. — *A Constant Reader. Nov.* 8. 1830.

Chrysánthemum sinénse. — I believe I may give up trying to flower Chinese chrysanthemums here in pots. In 1828 they did middling; but last year, after the flower-buds were formed, the leaves became mouldy, and the flower-buds withered and died. This season the flower-buds are very well formed, and at rather an earlier period than last year, but I am sorry to observe the leaves growing mouldy again; and I do not expect they will do any good. Can you or any of your readers tell me the cause of this, and how it is to be prevented? You know I have no green-house, but I have several windows facing the south, in which I place them; and I give them as much air as possible. I regret very much their going off in this way, as they are among my most favourite flowers. — *A. W. Crosslee Cottage, near Glasgow, Oct.* 25. 1830.

Double Cowslip. — There was once enquiry for a double cowslip by (I believe) Mr. Bree of Allesley Rectory: I beg to inform him that I have obtained one from a cottage garden, as double as a rose, having bloomed it last year. — *R. Errington. Oulton Park, Sept.* 1830.

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* "These things I have myself found by experience, and observed not without astonishment; because it seems beside, nay contrary to, the usual course of nature, that from one and the same animal an offspring of a different species should be generated; and that one and the same creature should procreate in three different ways; which yet is manifestly the case with these caterpillars, from what I have briefly related."

Amarýllis lùtea. — A. S. complains that this bulb, which used to flower with us every autumn, has ceased to do so for the last two years, &c. This is by no means an uncommon case, the bulb being one of those which descend. The Zephyránthes *Atamásco* is subject to the same change of habit from the same cause; and we cannot better answer the enquiry of A. S., than by quoting that good and cheap little work, Maund's *Botanic Garden*, No. lxxii.: — "It is not unfrequently recommended that bulbs which are somewhat tender be planted 8 or 9 in. deep, that they may the more certainly escape the effects of cold. We think this practice only a choice of two evils: that of losing the plant, or retaining it without flowers. It is certain that most bulbs will not flower in perfection when planted deeply in the earth; and also that many bulbs, having a tendency, from their mode of reproduction, annually to descend, require to be taken up every second or third year and planted at less depth, or no flowers will be produced."

Mr. Hobson's Work on Mosses. — I lament very much to see the death of poor Hobson of Manchester (Vol. VI. p. 749.), who really was a wonderful fellow. I have had, for myself and friends, many copies of his first volume of *Specimens of British Mosses*, and had hoped he would have continued the work. Do you know whether he ever published a second volume? — *B. Coventry, Jan.* 10. 1831.

Heating a hollow Fruit Wall by hot Water. — Sir, Being about to erect a hollow wall for fruit, I shall be glad to know how far the hot water system, which answers so well for hot-houses and pits, may be adapted to the purpose of heating walls. I have not met with any account of such an application; and beg, therefore, to trouble you with a few enquiries on the subject, which you or some of your correspondents will, perhaps, oblige me by noticing. I propose to make my wall 84 ft. long, 16 ft. high, and 14 in. thick; the back and front sides 4 in. each, or a brick in breadth, leaving the interior 5 or 6 in. wide. The back and front sides will be tied together by means of bricks, made expressly for the purpose, 14 in. long; and the whole wall, having a batter of about 4 in., will be supported by an old stone wall having soil on the north side of it within 3 ft. of the top, and being unfit for training trees against, to which I propose to fasten my hollow wall by iron ties. The hollow part of the wall I intend to fill up with stones, brickbats, &c., leaving sufficient space for the hot air to find its way from the bottom, where the pipes will be placed, to the upper part of the wall without interruption. I am inclined to think that iron pipes will be the cheapest and the best, and that a bore of 4 in. will be sufficient. Zinc pipes have been recommended to me, but I do not consider them so cheap in their first cost, or so durable as iron. I have not been able to ascertain that the reservoir, provided in most cases at the extremity of the pipes where hot water is used, is of any real utility. I observe a reservoir is spoken of as necessary where the pipes are carried to any length, to keep up the temperature at the extreme point from the boiler; but I think the circulation of the water not likely to be so brisk where a reservoir is used as where there is none, and where the water is carried from the upper pipe to the lower by means of a half bend of the same dimensions as the other part of the piping; and I feel disposed, therefore, to get rid of the reservoir altogether. Should any difference in the heat of the farther end of the wall, compared with that part of it which is near the boiler, be experienced, the only result will be that the trees nearest the boiler will ripen their fruit earliest. Having detailed the plan I intend to pursue, I would invite the criticism of such of your correspondents as are conversant with the subject. I am particularly anxious to know whether it has ever been attempted to heat so great a length of wall (84 ft.) by *one* fire before, and the result. The wall is required for peaches and nectarines. I am, Sir, &c. — *Lincolniensis. Nov.* 12. 1830.

Hard boiling Peas.—What is the cause of this? Do calcareous or alluvial soils produce the best boilers, or do sands? What influence has peat? It is said that a piece of iron put into the pot with hard indissoluble peas will render them dissoluble. Has this been proved by any of your readers? — *J. M.* *Nov.* 1830.

ART. VIII. *Covent Garden Market.*

	From £	s.	d.	To £	s.	d.
The Cabbage Tribe.						
Cabbages, per dozen:						
Red	0	3	0	0	4	0
Plants, or Coleworts	0	1	0	0	3	0
Savoys, per dozen	0	0	4	0	1	0
Brussels Sprouts, per ½ sieve	0	2	0	0	2	6
German Greens or Kale, per dozen	0	0	6	0	0	9
Broccoli, per bunch:						
White	0	1	0	0	2	6
Purple	0	1	6	0	3	0
Tubers and Roots.						
Potatoes, per ton	3	0	0	4	10	0
Potatoes, per cwt.	0	3	0	0	4	6
Potatoes, per bush.	0	1	6	0	2	3
Kidney, per bushel	0	2	6	0	3	0
Scotch, per bushel	0	2	6	0	3	0
Turnips, White, per bunch	0	0	1	0	0	2
Carrots, old, per bunch	0	0	5	0	0	7
Parsneps, per dozen	0	0	4	0	0	9
Red Beet, per dozen	0	1	0	0	2	0
Horseradish, per bundle	0	1	6	0	3	6
The Spinach Tribe.						
Spinach, per sieve	0	2	0	0	0	0
Spinach, per half sieve	0	1	0	0	0	0
The Onion Tribe.						
Onions, per bushel	0	4	6	0	6	0
Leeks, per dozen bunches	0	0	9	0	1	6
Garlic, per pound	0	0	9	0	1	0
Shallots, per pound	0	1	3	0	1	6
Asparaginous Plants, Salads, &c.						
Asparagus, per hundred	0	9	0	0	15	0
Sea-kale, per punnet	0	1	6	0	2	6
Lettuce, Cabbage, per score	0	0	3	0	0	6
Endive, per score	0	1	6	0	3	6
Celery, per bundle (12 to 15)	0	0	6	0	1	6
Small Salads, per punnet	0	0	3	0	0	0
Watercress, per dozen small bunches	0	0	6	0	0	0
Pot and Sweet Herbs.						
Parsley, per half sieve	0	2	0	0	2	6
Thyme, per dozen bunches	0	2	6	0	0	0
Sage, per dozen bunches	0	2	0	0	0	0
Mint, per dozen bunches:						
Dried	0	0	10	0	0	0
Forced, per bunch	0	0	6	0	0	0
Peppermint, dried, per doz. bunches	0	1	0	0	0	0
Marjoram, per doz. bunches	0	0	10	0	0	0
Savory, per dozen bunches	0	0	10	0	0	0
Basil, per dozen bunches	0	2	0	0	0	0
Rosemary, fresh, per dozen bunches	0	6	0	0	0	0
Lavender, dried, p. doz. bun.	0	2	6	0	0	0
Stalks and Fruits for Tarts, Pickling, &c.						
Rhubarb Stalks, per bundle	0	2	0	0	0	0
Edible Fungi and Fuci.						
Mushrooms, per pottle	0	1	0	0	1	6
Morels, per pound	0	14	0	0	0	0
Truffles, per pound:						
English, dried	0	14	0	0	0	0
English, green	0	0	0	0	5	6
Foreign, dried	0	14	0	0	0	0
Fruits.						
Apples, per bushel:						
Dessert	0	10	0	0	40	0
Court of Wick	0	10	0	0	0	0
Rosemary Pippins	0	12	0	0	0	0
Reinette grise	0	16	0	0	18	0
Nonpareils	0	20	0	0	40	0
Baking, per bushel	0	8	0	0	12	0
American	0	25	0	0	30	0
French	0	7	0	0	0	0
Bourdeaux Reinette	0	0	0	0	9	0
Court-pendu	0	0	0	0	9	0
Pears, Dessert, per dozen:						
Colmar	0	12	0	0	0	0
Chaumontel	0	6	0	0	0	0
Bon Chrétien	0	6	0	0	0	0
Baking, per half sieve						
Cadillac	0	5	0	0	0	0
Bell-shaped	0	5	0	0	0	0
Filberts, English, per lb.	0	1	3	0	1	6
Cobnuts	0	1	3	0	1	6
Pine-apples, per pound	0	5	0	0	8	0
Oranges, per dozen	0	0	9	0	2	6
Oranges, per hundred	0	4	0	0	16	0
Lemons, per dozen	0	1	0	0	2	0
Lemons, per hundred	0	6	0	0	14	0
Almonds, Sweet, per pound	0	2	3	0	3	0
Brazil Nuts, per bushel	0	12	0	0	16	0
Spanish Nuts, per peck	0	3	6	0	0	0
Barcelona	0	5	0	0	0	0
Shell Almonds	0	6	0	0	0	0

Observations. — Our supply of vegetables has been abundant, and of excellent quality, but the prices, in many instances, extremely low, and the demand very limited: from which I must conclude that the growers are not at present obtaining even remunerating prices, and are, consequently, suffering severe loss, which adds to the general depression that has affected the horticultural interest for some time past. I have attempted to find out the cause of the limited demand for vegetables at this season, as compared with others, but must refer you to my observations in Vol. VI. p. 733. — *G. C.* *Jan.* 14. 1831.

ART. IX. *Horticultural Society and Garden.*

NOVEMBER 2. — *Read.* A Report upon the Effect of planting certain tender Exotic Plants in the open Air at Bristol; by William P. Taunton, Esq. F.H.S. A Report from the Garden of the Society upon the Effect of the Stock upon Fruit Trees; by Mr. Robert Thompson. An Account of a new Kind of protecting Frame, to be used in forcing Asparagus, Sea-kale, &c., in the open ground; by Mr. John Dick, C.M.H.S.

Exhibited. Four sorts of apples, from Mr. John George Fuller, F.H.S. Downton pippins, from William Cobb, Esq., of Margate. Flowers of Matthìol*a* tricuspidàta, from Henry Shute, Esq. A species of Vernòn*ia* from Brazil, from Mr. J. A. Henderson, F.H.S. Flowers of Camellias, from John Allnutt, Esq. F.H.S.

November 16. — *Exhibited.* A pod of the *Entàda Pursæ'tha,* from Lord Auckland, F.H.S. Pear, No. 4., from T. A. Knight, Esq. Fruit of the Longan, from C. Webb, Esq. A pear unnamed, from Mr. Stephen Hooker, F.H.S. From the garden of the Society, fourteen sorts of Chrysanthemums, Poppy Anemones, twenty-five sorts of Apples, thirteen sorts of Pears, thirty-five sorts of Capsicum, fourteen sorts of Chilies, and five sorts of Endive. [The particular sorts not specified in the book from which, by the permission of the Society, this was copied.]

December 7.—The following notices were issued from the chair:—"That the Council have resolved that a fête and exhibition of fruits be held at the garden in June next;" and "That the Council have resolved that a course of three lectures on botany, applied to horticulture, be delivered next spring to the Fellows in their meeting-room in Regent Street."

Read. The Meteorological Register kept in the Society's Garden, for August, September, October, and November. A Report upon the Varieties of Pine-apple cultivated in the Society's Garden; by Mr. Donald Munro, F.L.S., head-gardener. (Part 1.)

Exhibited. A wilding pear, from J. W. Griffiths, Esq., F.H.S. Flowers of the two-coloured incurved Chrysanthemum, from William Wells, Esq. F.H.S. From the Society's garden, nine sorts of Pears, twenty-seven sorts of Apples, eight kinds of Beet-root; flowers of Chimonánthus fràgrans, and flowers of Chrysanthemum.

December 21. — *Read.* A Continuation of the Paper on the Varieties of the Pine-apple; by Mr. Donald Munro, F.L.S.

Exhibited. Allnutt's single-striped or carnation Camellia, from John Allnutt, Esq. F.H.S. From the garden of the Society, twenty-seven sorts of Apples, ten sorts of Pears; specimens of Succory; flowers of Chimonánthus fràgrans, Chimonánthus fràgrans var. grandiflòrus, and of six sorts of Chrysanthemum.

ART. X. *Provincial Horticultural Societies.*

HITHERTO the counties in this article have been arranged geographically, following the order of the Circuit Courts, as in the Statistics of the *Encyclopædias of Gardening and Agriculture;* with the present Volume we commence an alphabetical arrangement, thinking it will admit of more convenient reference, during the publication of the successive Numbers which form the Volume. When the Volume is completed, the counties can be easily referred to from the General Index.

Name of Secretary not before given.— Hull Floral and Horticultural Society, D. Brown, Esq.

CAMBRIDGESHIRE.

Cambridgeshire Horticultural Society.— Oct. 13. The following award of the judges was announced by Mr. Searle, the chairman:—

Flowers. China Asters, Mr. Bailey. — Marigolds. Six best: 1. French, Mr. Palmer; 2. African, Mr. Smith, gardener to Mr. Pym. — Stock, Tenweek, Mr. Henry Green. — *Sálvia*, in a pot, Mr. Searle.

Fruit. Grapes. Out-door, White: 1. Sweetwater, the Master of Downing; 2. Muscadine, Mr. Widnall. Black: 1. None; 2. Botanic Garden Grape, Mr. Biggs. — Peaches: 1. Galande, Mr. Newman, gardener to Lord De la Warr; 2. Admirable, Mr. Dall. — Nectarine, Brignon, Mr. Challis. — Plums, Coe's Seedling, Mr. Challis. — Apples. Table: 1. Ribston Pippin, Mr. Dall; 2. Carrée Pippin, Mr. George Stittle.—Pears. Table: 1. Brown Beurré, the Master of Downing; 2. Crassane, Mr. Challis. — Currants, White, Mr. Challis. — Alpine Strawberries (best plate), Mr. Newman, gardener to Lord De la Warr.

Culinary Vegetables. Cauliflowers: 1. Col. Pemberton; 2. Mr. Lestourgeon.

Cottagers' Prizes. Grapes. Out-door: Black and White, Joseph Beales, Cherryhinton.— Table Apples, Table Pears, Celery, and Parsneps, James Tuck, Windmill Cottage, Harston.

Extra-Prizes. Cherries, Morello, Mr. Challis. — Strawberries, Roseberry, Mr. Newman, gardener to Lord De la Warr. — Raspberries, Red, Mr. Searle. — Celery, Mr. Hudson. — Endive, Mr. George Stittle. — Onions, Mr. Newman, gardener to Lord De la Warr.

Cottagers' Extra-Prizes. Kitchen Apples, Cambridge Pippin, George Dickerson of Trumpington. — Onions, Benjamin Knight of Waterbeach. (*Cambridge Chron.*, Oct. 15. 1830.)

Dec. 1. The Rev. Mr. Lascelles was in the Chair, and announced the following prizes: —

Flowers. Chrysanthemums, Double: 1. Superb Clustered Yellow, Superb White, Starry Purple, Quilled Yellow, Lee's Large Purple, and Golden Yellow, Mr. Haylock; 2. Superb Clustered Yellow, Superb White, Lee's Royal Purple, Superb Quilled Purple, Changeable Buff, and Quilled White, Mr. Searle. Of any sort, Superb Clustered Yellow, Mr. Biggs. In a pot, Superb White, Mr. Arthur Biggs, Curator of the Botanic Garden.

Fruit. Grapes, Muscat of Lunel, Mr. Palmer. — Apples. Table: 1. Hawkins's Nonpareil and Ribston Pippins, Rev. Geo. Jenyns; 2. Transparent Pippin and Scarlet Nonpareil, Mr. George Stittle. Kitchen, Caldwell Pippin, and Cambridge Pippin, Rev. Geo. Jenyns. — Pears. Table: 1. Crassane and Colmar, Rev. Geo. Jenyns; 2. Swan's Egg and St. Germain, Mr. Palmer.

Culinary Vegetables. Broccoli, Mr. Lestourgeon. — Celery, Col. Pemberton.

Extra-Prizes. Table Apples, Mr. Horobin. — Onions, White Spanish, Mr. Palmer. — Baking Pears, Cadillac, Col. Pemberton. — Bouquet, Mr. Catling. — Endive and Lettuces, Mr. Stittle. (*Cambridge Chron.*, Dec. 3. 1830.)

DURHAM AND NORTHUMBERLAND.

The Botanical and Horticultural Society of Newcastle.—A Meeting of the Committee of this Society was held on November 22d, when the London Society's large medal, which they have placed at the disposal of this Committee, was unanimously awarded to Mr. James Scott, gardener to Edward Charlton, Esq., of Sandoe, for the many beautiful exhibitions by him of fruits, flowers, and vegetables, by which he has gained the greatest number of this Society's medals during the season; and, at the same Meeting, a reward of *2l. 2s.*, in addition to the silver medal formerly awarded him, was voted to Mr. William Kelly, gardener to Armorer Donkin, Esq., of Jesmond, for an Essay on the Culture and Management of the Hyacinth, as the best written essay delivered to the Society for the year; and by adopting the plan suggested by him, it is hoped, in a few years, to supersede, in a great measure, the necessity and expense of importing those beautiful bulbs from Holland. (*Newcastle Cour.*, Dec. 4. 1830.)

Nov. 5. At the last General Meeting for the year the following prizes were awarded: —

The Society's silver medals to Mr. Robert Charlton, Wall, for the best dish of dessert apples, and the best dish of currants. The silver medal to Mr. John M'Leish, gardener to A. J. Cresswell Baker, Esq., Cresswell, for the best dessert pears, silver medals to Mr. Joseph Clarke, gardener to Mrs. Bewicke, Close House, for the best dish of grapes, the best dish of plums, and also the bronze medal for the best six heads of endive. The silver medal to Mr. William Grey, gardener to Thomas James, Esq., Beaufront, for the best bouquet of *C*hrysánthemum índicum flowers. The silver medal to Mr. Johnson Trotter, gardener to David Cram, Esq., Newcastle, for the best six plants of tobacco, grown in the open air, and cured in the district. The bronze medal to Mr. Hugh Robson, gardener to Capt. Bacon Grey, Styford Hall, for the twelve largest onions. The bronze medal to H. Lamb, Esq., for the best six roots of rampion. The bronze medal to Mr. John Moderill, gardener to J. C. Anderson, Esq., Point Pleasant, for the best six roots of red beet. The bronze medals to C. J. Clavering, Esq., Axwell Park, for the best twelve roots of shallot. The bronze medal to Mr. William Kelly, gardener to A. Donkin, Esq., Jesmond, for the best dish of mushrooms. The silver medal to J. G. Clarke, Esq., Fenham Hall, for the best exotic plant in flower (Mù*sa* coccínea). The silver medal to Mr. Adam Hogg, at Messrs. William Falla and Co.'s, Gateshead, for the best bouquet of flowers. A very fine Queen Pine was exhibited from the garden of J. C. Anderson, Esq. Some fine plants of *B*èta cìcla, from the garden of J. G. Clarke, Esq.; and a very beautiful specimen of *S*álvia splèndens, from the green-house of William Losh, Esq., of Benton. Six immensely large and fine onions were sent to the exhibition by Mr. Robert Elliot, gardener to Sir John Trevelyan, Bart., of Wallington. (*Newcastle Cour.*, Nov. 13. 1830.)

Hexham Botanical and Horticultural Society. — *Nov.* 22. The prizes were awarded as follows: —

To Mr. Thomas Watson, gardener to James Kirsop, Esq., Spittal, for the best twelve dessert apples, best four roots of red beet, best four stalks of Brussels sprouts, and the third bouquet of flowers; to Mr. James Scott, gardener to Edward Charlton, Esq., Sandoe, for the best four cauliflowers, and the first bouquet of flowers; to Mr. Geo. Robson, gardener to N. Clayton, Esq., Chesters, for the best twelve dessert pears, and the best twelve baking apples; and to Mr. Robert Grey, Humshaugh, for the second bouquet of flowers. (*Newcastle Cour.*, Dec. 4. 1830.)

NORFOLK.

Norfolk and Norwich Horticultural Society. — *Nov.* 17. It is just a year since this Society held its first Meeting at the large room at the Swan: the rapid increase of its members, however, soon precluded the possibility of any room affording accommodation for the company, or receiving the numerous specimens with which its exhibitions are graced, of less dimensions than the Corn Exchange, in which noble building all its Meetings have since been held, and which, from its ample space, and the admirable manner in which the light is admitted, is peculiarly adapted for the purpose. Many of the cut flowers were shown in phials, placed on circular revolving stands, which are so constructed that any flower may be brought under notice by merely touching a handle, which sets the whole in motion. This little machine is the invention of Mr. Ayton, the bailiff of the Corn Exchange, and has received the appellation of the Bouquetarium. A new seedling pear called Hacon's Incomparable, raised at Downham from the seed of a small-sized pear called Reyner's Downham seedling, was shown by Mr. J. C. Hacon of Swaffham. This is a fruit of great excellence, saccharine and melting, a good and early bearer, and with the valuable property of decaying first externally and not at the core.

Prizes were awarded as under: —

Plants and Flowers. Cáctus truncàta in flower, silver medal, Mr. Hitchen. — Strelítz*ia* regìnæ, bronze medal, Rev. George Leathes. — Heliotrope and Tuberose, bronze medal, Miss Hudson. — Chrysanthemum (12 pots): 1. silver medal, Mr. Charles Middleton; 2. bronze medal, Mrs. Mackie. Double Yellow Chrysanthemum, bronze medal, Mr. J. Vince. — Prímula sinénsis, bronze medal, Mrs. Mackie. — Basket of Dried Flowers, Mrs. Mackie.

Fruit. Grapes. Frankenthal, silver medal, Lady Preston. Black Hamburgh, bronze medal, John Gordon, Esq. Black Prince, ripened on outward wall, bronze medal, T. S. Norgate, Esq.— Thirty named varieties of Apples, silver medal, Peter Raven, Esq. — Bursdoff Apples and Crassane Pears, silver medal, Charles Thompson, Esq. — Ribston Pippins and Crassane Pears, silver medal, Mrs. Dashwood—Norfolk Pippins, bronze medal, Rev. T. S. Buckle.—Cat's Head Apples, bronze medal, John Gordon, Esq. — Hacon's Incomparable Seedling Pear, silver medal, Mr. J. C. Hacon. — White Currants, bronze medal, Lady Preston. — Oranges and Lemons from the Conservatory, bronze medal, Rev. C. Long. — Medlars, Mr. C. Crickmay, gardener to John Longe, Esq.

Culinary Vegetables. Potato Onions, Mr. Charles Crickmay, gardener to John Longe, Esq.

Cottagers' Prizes. Spanish Onions, John Green. — Imperial Broccoli, John Reynolds. — Savoy Cabbages, R. Randall, and Mr. Wharton. — Union Pears, Charles Root. — Palestine Pears, Thos. Brown. (*The East Anglian.*)

SUFFOLK.

Ipswich Horticultural Society. — *Nov.* 9. The exhibition was viewed by a numerous company, who appeared highly gratified at the display of fruit, which, notwithstanding the unfavourableness of the season, surpassed any previously shown there at this time of the year. After the show upwards of fifty gentlemen sat down to dinner, at which W. Rodwell, Esq. presided. (*Bury and Norwich Post,* Nov. 17. 1830.)

WORCESTERSHIRE.

Vale of Evesham Horticultural Society. — *Sept.* 23. Prizes were awarded as under: —

Plants. Stove and Green-house: 1. Bouvárd*ia* triphýlla, and 2. E'pacris grandiflòra, Mr. Smith; 3. Gloxín*ia* maculàta, Edward Rudge, Esq. Hardy Annuals: 1. China Aster, Mr. Balls, Toddington; 2. African Marigold, and 3. Diánthus chinénsis flòre plèno, Mr. Hunt. — Perennials, Lobèl*ia* fúlgens, J. Taylor, Esq.—Cockscombs: 1. Edward Rudge, Esq. (measured 2 ft. 9 in. over the flower); 2. Mr. Liddell.

Flowers. Georginas. Crimson: 1. R. Burlingham; 2. Smith's Rival, Mr. Smith of Worcester. Purple: 1. Princess Augusta, and 2. Purple Heath, Mr. Bates, Oxford. Scarlet: 1. Robusta, Mr. Bates; 2. Romulus, Mr. Smith. Sulphur, Wells's Drop, Mr. Bates. Deep Orange, Coronet, Edward Rudge, Esq. Light, Seedling, Sir Charles Throckmorton, Bart. White, Mountain Snow, Mr. Bates.

Fruit. Damsons: 1. Mr. Cheek; 2. Mr. J. Hayward. — Apples. Dessert: 1. Yellow Ingestrie Pippin, Mr. Bates; 2. The Orange Apple, and 3. Pompion, Mr. Hignell. Seedling: 1. and 2. Mr. Hignell; 3. Mr. J. Hayward. Culinary: 1. Mr. Hunt; 2. Winter Pippin, Mr. Cooper, Pebworth; 3. Alexander, Mr. Hignell. Cider, Black Taunton, Mr. Hunt. — Pears. Dessert: 1. Brown Beurré, Mr. Balls; 2. Mr. Hunt; 3. Crassane, Mr. Liddell. Seedling, Mr. John Hayward. Perry: 1. Seedling, Mr. Hunt; 2. The Oldfield Pear, Mr. John Smith of Comberton. — Grapes, Out-door: Black, Black Cluster, Mr. Burlingham; Red, Frontignac, Mr. Barnes; White, Sweetwater, Mr. Mumford.

Culinary Vegetables. Peas, Sir Charles Throckmorton, Bart. — Carrots: 1. Mr. John Pain; 2. Sir Chas. Throckmorton, Bart. — Onions: 1. Portugal, Sir Chas. Throckmorton, Bart.; 2. Tripoli, and 3, Blood Red, Mrs. Charles. — Red Beet, Edward Rudge, Esq. — Celery. White: 1. Mr. Bates; 2. Edward Rudge, Esq. Red: 1. Mr. Bates; 2. Mr. Caleb New.

Extra-Prizes. Golden Drop Plum, Mr. Mumford. Emperor Plum, John Taylor, Esq.—Cítrus Médica, Mr. Smith. — Queen Pine, Mr. Fulton. — Red Roman Nectarine and White Muscat Grape, John Taylor, Esq. — Black Hamburgh Grape, Mr. Smith.

One side of the Hall was filled with Georginas, crimson, purple, scarlet, sulphur, orange, light, and white, from the gardens of Lord Northwick, Sir Charles Throckmorton, Bart., Edward Rudge, Esq., John Taylor, Esq., Thomas Blayney, Esq., Mr. Smith, Mr. Bates, Mr. Butcher of Stratford, Mr. Lowe of Binton, Mr. Balls of Toddington, and Messrs. Montford, Hunt, Burlingham, and Gregory. The stove and green-house plants were from Mr. Smith of Worcester, the stove-house of Edward Rudge, Esq., and the conservatories of Sir Charles Throckmorton, Bart., John Taylor, Esq., and N. C. Hartland, Esq., most of whom also furnished the abundant supply of fruit, with which the tables were completely filled; comprising pines, melons, hot-house and out-door grapes, peaches, nectarines, plums, sixty-eight specimens of apples, and thirty-five of pears, on the plates of the Society.

At this Meeting a communication was read from Mr. Anthony New of Evesham, gardener, on his method of cultivating asparagus, of which some extraordinarily large specimens were exhibited by him, and obtained prizes at the first and second Meetings of the Society, in April and May last. (*Worcester Herald.*)

THE

GARDENER'S MAGAZINE,

APRIL, 1831.

PART I.

ORIGINAL CORRESPONDENCE.

Art. I. *Notes and Reflections made during a Tour through Part of France and Germany, in the Autumn of the Year* 1828. By the Conductor.

(*Continued from* p. 20.)

The Gardens of the Commercial Florists of Paris are numerous, but none of them are large, nor is the capital embarked in them any thing like that which is employed in the corresponding class of gardens of London; such establishments, for instance, as those of Colville, Allen, Moore, Dennis, &c., in the King's Road. The florists' gardens of Paris differ also from those of London in not having show-houses; their productions being sent chiefly, or almost entirely, to the public flower-market, and there exposed for sale by their wives or daughters. In London, the wealthy and the amateurs delight in passing from one nursery to another, examining what is in perfection or coming forward, and purchasing here and there what pleases them. In Paris, the admirers of flowers go to the flower-market, where they find displayed the bloom of all the commercial gardens. The essential cause of this difference in the mode of purchasing flowers in London and Paris, we apprehend to be the general prevalence of botanical knowledge among the wealthy females of England; whereas, in France, botanical knowledge among wealthy females is rare. The love of flowers, as ornamental to a house, is common to the two countries; but in England the feeling is cultivated; and the enjoyment is greater in proportion to the degree of cultivation. In this single article of seeing flowers with the eye of a general observer, and seeing them with the eye of a botanist, how immense is the advantage of possessing a little knowledge! and if this be the case in so small a matter, how important to the enjoyment of life must be the education of all our faculties and feelings! All human enjoyment above that of the brutes around us is the result of this cultivation. Whoever neglects self-cultivation, in every particular matter with which he has to do, is neglecting his own happiness, and trifling with the gift of life.

The Flower Market of Paris occupies an open area of about two acres, and the stands of the different florists are held under three parallel rows of the common and three-thorned acacia. These stands are almost always kept by the wives or daughters of the growers, and not, as in London, by a distinct class intermediate between the grower and the consumer. Every thing connected with the stands is portable; the pots and plants are, for the most part, set on the ground; and only such as sell seeds and cut flowers have small benches on which they are placed. In summer the attendant lady sits in a chair, close behind which is a pole or rod terminating in a hole, for the insertion of an umbrella, which serves also as a parasol. In winter she has a mat round the chair, and straw upon a board, on which to place her feet. Some have small portable houses, with a brazier of charcoal embers. We visited the market on September 13th and December 20th.

Sept. 13. — The number and variety of well-grown shrubs and plants in pots very much surprised us, never having seen any thing like such a show in Covent Garden Market. There were not many cut flowers. Among the plants in pots and in flower, we noted down at the time as follows: — The pomegranate; oranges in great variety of size, with and without fruit; Solànum Pseùdo-cápsicum *Hort. Brit.*, with green and ripe fruit and blossoms, a shrub by far too much neglected in England; jasmines, several species; double oleander, white and red; myrtles, double and single, and broad and narrow leaved; roses of various sorts; vines in pots, with from six to eight large bunches of grapes on each; apple trees with fruit; *A*lthæ`a frùtex; Magnòl*ia* grandiflòra; Clerodéndrum fràgrans; Crássula oblìqua; tuberoses; forget-me-not; strawberries covered with fruit; and, as near as we could estimate, about forty-five sorts of green-house and hot-house plants in flower, the names of which we could not stop to take down.

Balsams, asters, phlox, georginas, and similar autumnal flowers, were very numerous. There were plants taken up with balls of cocksfoot grass, and pots of young barley, both, as we were told, for the use of dogs. Bulbs and flower seeds, boxes of mould for shifting plants, flower-pots, watering-pots, frames and rods for tying plants to, and willows and dried rushes from Spain (see p. 15.) for tying them with. The women appeared healthy and in good spirits, and were, as usual in similar cases, eager to procure purchasers: a few of the youngest of them, in the intervals between bargaining or speaking to customers, occupied themselves in reading, we wish we could say works on natural history; they were, however, novels, which we consider the next best in similar cases.

Dec. 20. — Camellias, including the single white, and orange trees, with Bengal roses and jasmines, made the principal figure. Metrosidèros lanceolàta, Phýlica *e*ricöìdes, a species of Pitcaírn*ia*, a great quantity of mignonette, several species of heaths, hyacinths, violets, *T*ussilàgo fràgrans, and other plants, in flower. A number of bulbs, in pots of earth, grown an inch or two, and ready to be taken out on the spot and put into water-glasses. Many pots of evergreens, and a great quantity also in bundles, as in the tree market before mentioned. (p. 12.) Among the adjuncts were basket willows of six or eight different sizes, Russian mats, straw mats, moss, pots, &c., as before, and abundance of paper for enveloping the more delicate of the plants purchased. We made several purchases here for the Surresnes garden, alluded to in our last (p. 12.); and were amused at the clumsy attempts made to impose one thing for another upon us by the fair dealers. We were fully prepared for this; and, indeed, should have been surprised had these lively and agreeable women acted otherwise. The first stage in the progress of civilisation is spoliation, because that indicates a desire for the possession of something that one has not got, and cannot procure without labour. This labour, in the robber state of society, consists chiefly of physical force; and the food or clothing of one man is taken from him by another by knocking him down, or breaking into his house, as the case may require. The second stage is that of barter, in which one article of use is exchanged for another. The third stage is that of a circulating medium, which forms a common article of exchange for all others. In these three stages one common principle is at work — that of deception, by which the one party endeavours to intimidate or outwit the other party, so as to induce him to give up his food or clothes, or to part with his goods or money, for less than they are worth. The rules for playing at this game of skill, however, vary with the state of society, and the principle of deception gradually gives way to that of equivalency. The ladies in the French flower-market employ deception, like those of our Covent Garden; but the latter are certainly much farther advanced towards the principle of equivalency. The French flower-dealers are about on a par with what the sellers of fish were in Edinburgh twenty years ago. The spread of knowledge among the labouring classes of France, which has only just commenced with the *Projet de Loi pour l'Instruction Primaire*, of January, 1831, will raise the next generation of French gardeners' wives and daughters into the highest principle of commerce; and the Conductor of the British *Gardener's Magazine* in 1880 will find them in advance of those of London, unless we also adopt a law for the instruction of all. We shall now glance at a few of the flower-gardens, premising that all of them are within the exterior barrier of the city.

Fion's Garden. — *Dec.* 29. We glanced at this garden in September, and examined it more in detail in December. It is decidedly more ingenious, both in a botanical and ornamental point of view, than any which we met with among the French commercial gardens. M. Fion has invention, enthusiasm, and taste; and the whole of these qualities being directed to his profession, and employed upon a spot not much larger, as it seemed to us, than an English acre, he has formed a garden brimful of interest. Had he the means, he told us, he would make a simple work of building hot-houses and cultivating tropical plants, by covering his entire garden with a lofty roof of glass: but no man exercising the faculties above-mentioned is very likely to accumulate wealth. A man of genius who has to procure the means of subsistence by a profession, will of necessity always be on the verge of want or insolvency: and, if he begins as an independent man, with a fortune at his command, he is equally certain of spending it, and coming to want. This is a disease incident to a peculiar stage in the progress of education; and the only palliative is to increase the number of tastes and pursuits of the patient, so as to neutralise or reduce the ruling passion. The French, we cannot help thinking, are much less apt to ruin themselves by any single pursuit than the English; perhaps, because to every Frenchman the enjoyment of female society forms an essential part of life.

We can only speak of M. Fion's garden from recollection. It contains a number of houses and pits, in which is not only an extensive stock of popular plants, such as camellias, ericas, pelargoniums, oranges, &c., but also some of the most rare hot-house and green-house plants to be found in Paris. There are some ornamental buildings; a small temple containing a bust of Thouin (and it is paying M. Fion no mean compliment to say, that he duly appreciates the character of this most scientific of French gardeners); rockwork; fountains; painted landscapes, as terminations to walks in the open air, and also for completing the effect of certain compositions of rockwork, water, and succulent plants, which he has formed within the houses. There is a wall covered with orange trees, which bear abundantly, and have a fine appearance.

In side-grafting camellias, oranges, and magnolias, instead of inserting the lower end of the scion into a phial of water (Vol. II. p. 33. fig. 12.), or into a potato as practised by Mr. Murray (Vol. III. p. 29.), M. Fion inserts them in the earth of the pot; and he showed us the scion of a Magnòl*ia* conspícua which had rooted in this way. Every part of his grounds is as neat and orderly as it is tasteful; and, in short, there is no commercial flower-garden in Paris that will so well repay the visitor.

Garden of M. Tamponet, Fleuriste de la Chambre du Roi. — Oct. 4. The space occupied is about two acres, and it displays the best assemblage of large orange trees and camellias which we have anywhere seen in France; the whole in excellent order. The young orange trees, and all such as by accident or design are in a growing state, are preserved through the winter in green-houses with glazed roofs like those of England, and in flued pits. Those which are not in a growing state are packed close together in one of those barn-like orangeries which are common to commercial gardens in France. The largest tubs are placed on the ground; the next largest upon them in the interstices between the trees; and above these a third tier of still smaller boxes; so that not a foot of room, from the floor to the ceiling, is lost. An English gardener would hardly believe it possible that plants so closely packed together, in a house having no more light than an ordinary room, and totally without flues or any means of supplying artificial heat, would pass the winter without losing their leaves. It is certain, however, that they do so; and the secret of this is, that the trees are thrown into a dormant state about the middle of September by withholding water. During winter, the frost is effectually excluded by wooden shutters; and over these, when necessary, straw mats. The windows are not opened after winter has fairly set in, till its greatest severity is believed to be over; and, unless in houses where there is a flue, no water is given during that period, and sometimes not till the end of February. This treatment would scarcely answer in the moist climate of England: but yet it affords important hints for preserving oranges in pits and against flued walls. In a dry stratum of chalk we should have no fear of preserving orange trees of any size, in a deep excavation covered with glass, though without the means of applying artificial heat.

Garden of M. Doube, Fleuriste, Rue de Charonne, No. 172.—*Oct.* 4. The surface appeared to be not quite an acre. There is an extensive barn-like orangery, containing a collection of very large orange trees purchased at the sale of a nobleman's effects during the first Revolution, and now kept for their flowers. Some of the tubs bore inscriptions signifying by what king of the last century the tree had been presented to the former owner; a proof that an orange tub will at least last 40 years; the material is oak. Neapolitan violets are here cultivated in large quantities; they are planted in beds enclosed by boards, on which sashes are placed during the winter: with this protection, and without any heat, they continue to produce flowers from November till May. The variety of rose called *Quatre saisons* forms a main article of culture; the plants are cut down about the end of August, in consequence of which they come into bloom from the middle of October to Christmas. The latest are covered with glass, in the same manner as the violets. There are here some very large standard apricots, which bear well every year. Every odd corner, the walls and roofs of the buildings, and the shed of a gin-wheel for raising water, are covered with vines, apparently the green Chasselas, from which was then hanging an abundant crop of grapes. The leaves were thinned to a greater degree than we should approve of; but the proprietor defended the practice, not so much because it ripened the fruit, as because it coloured it by admitting the direct influence of the sun, and so gave it a somewhat withered and ripened appearance. The crop of grapes on these vines, which were rooted into dry rich soil on limestone rock, exceeded any thing we have ever seen in the open air.

Ballard's Flower-garden, Rue Basfroy.—*Dec.* 29. One object of this gardener is to have carnations in flower every day in the year. He had a great quantity of laurustinus and common box in pots; and in pits he was forcing roses, lilacs, *Ibèris semperflòrens*, common mezereon and other species of *Dáphne*, &c. On dung-beds, covered with glass frames, he was bringing forward pinks and other herbaceous plants, hyacinths, tulips, crocuses, and other bulbs. We have not a sufficiently distinct recollection of the other commercial flower-gardens to say much about them; and we shall therefore, in our next Number, proceed to market-gardens.

(*To be continued.*)

Art. II. *Observations on several Gardens in England and Wales.*

By Mr. William Saunders.

Highclere, Hants, the Seat of Earl Carnarvon.—*June* 22. Here is an extensive park, the grounds beautifully varied, and highly enriched with fine timber. Much has been done by nature in creating romantic scenery; but nature's rudeness has received a polish from the taste of the noble proprietor, and it now presents to view, in all directions, many interesting features. Much care has been bestowed on the cultivation of *R*hodoràceæ; and this care has by no means been spent in vain, as the gardener has succeeded in raising a numerous progeny of hybrids. There is a large clump of a hybrid *R*hododéndron, between *R.* arbòreum and *R.* catawbiénse. It partakes much of the appearance of *R.* arbòreum, and is said to participate, in a considerable degree, in the magnificence of its flowers. It is found to be tolerably hardy, having stood last winter well with a slight protection.

The beds of hybrid azaleas were still very splendid, although many of the best flowers were now going off. They will of themselves alone form a rich addition to the list of ornamental shrubs. Several fine new varieties have this season flowered. The soil here seems to be peculiarly adapted to the cultivation of this family, although doubtless much also depends on the great degree of attention bestowed on them.

The flower-gardens and hot-house department have undergone much improvement within these last few years; a fine collection of Amaryllì*deæ* occupy a large proportion of the house, and from long-continued assiduity many superior hybrid varieties have been raised. The kitchen-garden, from the nature of the soil and the limited attention which can be given to it, is neither so productive nor in such high keeping as might be expected from the general appearance of the grounds. The mansion is now undergoing a thorough repair and enlargement; and, when completed, this place bids fair to rank among the first in the kingdom.

Elcot Place, near Newbury, the Residence of the late A. Bacon, Esq.—*June* 23. A compact and well laid out kitchen-garden, walled in, and containing a considerable range of graperies and peach-houses, which at the first glance appear rather confined, being narrow; but, from the crops, they seem to work well. They are divided in such a manner as to secure the forcing of any one department independent of another, while they are heated by one boiler, on Mr. Whale's method, as described in Vol. III. p. 186. Had the spirited proprietor lived, this would soon have become a place where horticulture would have been carried to a high pitch, as is evident from the extensive conservatories and pleasure-grounds that were on the eve of being produced. On the whole, every thing seemed to have been conducted in a liberal and systematic manner, combining elegance with use.

Denford Place, near Hungerford, the Residence of —— Cherry, Esq.—June 23. A small, well kept place, the kitchen-garden well enclosed. The wall trees here, particularly peaches, have nearly been destroyed by blight within the last two years. The soil a stiff loam, with a cold wet bottom, which has no doubt contributed greatly to their destruction.

The park has been much improved by the planting of a number of young oak trees from 20 to 30 ft. high, which were removed during last autumn and spring from a plantation about a mile distant, a method very similar to Sir Henry Steuart's being adopted. The soil from which they were taken is a good loam. One of the trees measured, at 1 ft. from the ground, 3 ft. 10 in. in circumference, and yet they now exhibit no signs of having received the least check. A Scotch pine had also been removed, which, although the tree is about 20 ft. in height, looks not a whit the worse: the expense amounted to nearly double Sir Henry Steuart's statement.

Chilton Lodge, near Chilton, the Residence of John Pearse, Esq.—June 24. A good kitchen-garden, and neat pleasure-grounds. The kitchen-gardens contain a fine range of graperies, and a neat peach-house, in which were some of the finest peaches I have seen this season, now ripe, and weighing from 7½ to 9 ounces each. The trees are planted inside the house, and trained on a wire trellis, about 14 in. from the glass. It is heated by a common flue, which also heats a mushroom-house behind.

Littlecot Park, the Seat of General Popham.—June 24. This is a well wooded park of varied surface; the gardens neatly kept. The walls are well filled, and there are some superior apricot trees. The peach and nectarine trees had suffered greatly from mildew this season, consequently the crop was below an average one. I observed a good collection of pines, grown mostly in frames; also an excellent crop of grapes and peaches. The peach-houses have lately been heated by hot water, which Mr. Wall has found to answer well.

Tottenham Park, the Residence of the Marquess of Aylesbury.—June 25. A widely extended demesne, including Marlborough Forest, through which eight avenues are cut, diverging from one common centre. Much has of late been done in beautifying and enlarging the pleasure-grounds and gardens.

The kitchen-gardens contain about four acres enclosed with brick walls, one of which, a south-east exposure, is clothed with the finest peach and nectarine trees imaginable, there hardly being a spare foot of wall or a blemished leaf to be seen, while they were loaded with fruit. The trees have mostly been planted within the last eight or nine years. Mr. Burns, before planting, had the border well prepared, and laid on a slope of about 20 in. from the wall to the walk, the border being 12 ft. wide, so that it effectually prevents any danger of an over supply of water. The border has been very sparingly cropped, but manured plentifully. Mr. Burns has also excelled in the cultivation of the pine-apple: the sorts he grows are chiefly Black Jamaica, Antigua, Enville, and Providence. They are grown in pits filled with leaves and heated with dung linings, while he fruits them in a pit, as under. (*fig.* 15.)

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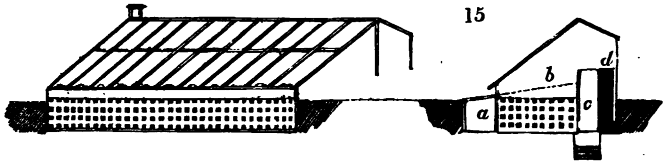

The front and ends are surrounded by the dung linings, which are 4 ft. wide, as high as the bed, and covered with oak boarding (*a*); the bed (*b*) is filled with oak leaves, and is 38 ft. long, by 12 ft. in width; behind it are the path and flues. The house is entered by a door (*c*), after descending a few steps; the flue (*d*) goes and returns on itself between the path and back wall. The rafters and sashes are of iron; the walls are 9 in. brickwork, ends and front pigeon-holed. It appears to be a pit well adapted for the fruiting of the pine, from the facility with which the heat can be kept up, and the readiness with which the plants can be got at, either from the inside or out, the bottom sashes being movable. It perhaps might be improved by substituting hot-water pipes for the flue.

In the house occupied by the Tottenham Park seedling muscat of Alexandria there is an excellent crop; the berries promise to be very fine. On leaving a delightful flower-garden, you are ushered upon a magnificent bank of Rhododéndron, Azàlea, Kálm*ia* &c. in a very luxuriant state. This bank is flanked on one side by a covered walk of roses and clematis, on the other by a wall upwards of 400 ft. long of Magnòl*ia* grandiflòra. On the bank there is a fine specimen of Bèlis lanceolàta, nearly 10 ft. in height, which looks as healthy as the rhododendrons; it has stood the last two win-

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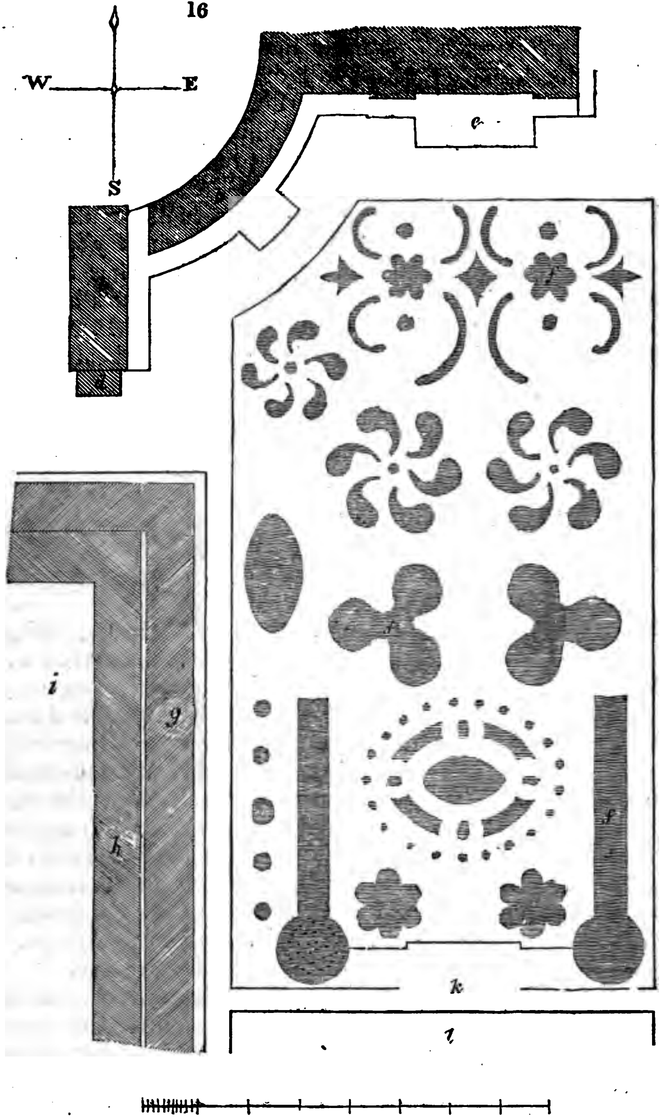

a, Library. *b*, Conservatory. *c*, Orangery. *d*, Portico. *e*, Terrace.
f, Groups of flowers and roses. *g*, Border sloping to the right, for American plants.
h, Border sloping to the left, for common evergreens.
i, The park, the surface sloping to the left. *k*, Open terrace.
l, Space on which the flower-garden is intended to be continued.

ters without any material injury. To form this bank, Mr. Burns had the soil dug from a heathy common, and planted it immediately; and he ascribes the very rapid progress the plants have made, to the nutriment they have received from the gradual decay of vegetable substances contained in the soil.

The pleasure-grounds are very extensive, and in high keeping; the conservatory and orangery form the south-west wing of the splendid edifice, which is now being built as the chief residence of the noble family. The orangery contains a number of very fine orange trees, lately purchased in France; the family having had the misfortune to lose by fire, a few years ago, upwards of one hundred large trees. The accompanying plan (*fig.* 16.) is that of a new flower-garden, laid out on the south front of the house last spring.

William Saunders.

Art. III. *General Remarks on the Progress of Intellect among Gardeners; with some Account of the Improvements recently made in the Hot-house of George Cooke, Esq., of Doncaster.* By Q.

Sir,

It must be truly gratifying to the lovers of the science of gardening, to witness the long list of practical gardeners who have taken up the pen to contribute to your excellent Magazine, and who had never written before in any publication. The great utility of your work, and the improvements it is effecting among those for whom it is intended, is obvious to the meanest capacity. It might, indeed, be expected that every gardener would eagerly approach to it, as he would to a feast after enduring a famine; yet many "make light" of this precious feast. Held in chains by old customs, and fettered even in opposition to their own best interests, they shut their eyes against improvements. The language of such is, "We want none of your new-fangled ways: why should we pretend to be wiser than our fathers?" Such men "love darkness rather than light," because of their obstinacy and overweening conceit. But happily there are others better disposed; and to such the Gardener's Magazine is a treasure. These are minds of a superior order; they are now bursting their chains, and loosening themselves from the trammels of authority. A spirit of improvement, a passion for experiment, and a liberal curiosity, prompt them to quit the old beaten paths, and to explore untried ways; to disdain the bondage of prescription, and to seek to acquire wisdom by experience.

Such a vehicle as your Magazine was much wanted; as the most obvious and important occurrences, if not communicated and recorded while yet recent, soon become either obliterated by time or obscured by tradition, and leave only a few mutilated facts or unconnected fragments for the information of the public.

There are many improvements in this neighbourhood which are worthy of record in your miscellany, but I shall only call the attention of your readers to a hot-house recently erected in the garden of George Cooke, Esq., Carr House, near Doncaster, which exhibits the greatest improvement hitherto made in hot-houses of this description. It is fitted up for vines and pines, and is intended to answer the purposes of two houses in one. It is furnished with hot-air flues, and has ventilators in the back wall, which admit the cold air without the sliding of the top sashes. It has a glass partition the length of one side, which shuts up the house at pleasure, in order to exclude the vines during their state of dormancy from the action of the artificial heat. They are thus left in a comfortable situation to take their natural repose, until the time arrives for them to awake fully refreshed, and to commence their labours in order to "bring forth fruit to perfection." The partition is then removed, and the vines are again admitted within the pale. As man cannot well perform his work if deprived of his natural rest, no more can "the generous vine." It is to be expected that vines thus managed will be much more abundant in fruit.

I may just notice that over the furnace is placed a boiler, with a steam-pipe which is conducted most eligibly through the building, and three stop-cocks to admit steam into the house at pleasure.

The whole certainly embraces ingenuity of design, economy, utility, and convenience, and reflects much credit on the gardener at Carr House, Mr. James Stephenson, under whose directions the whole has been completed.

Hoping that ere long some one more able will give you a more particular description of these improvements,

I am, Sir, &c.

Doncaster, *Jan.* 14. 1829. Q.

Art. IV. *On an improved Boiler for heating Hot-houses by hot Water, and on some other Modifications of Hot-water Apparatus.* By Mr. John Mearns, F.H.S.

Sir,

The object of this communication is to notice an excellent and most simple hot-water boiler, invented by a very ingenious man in Worcester of the name of Oslar, foreman of Mr. Bradley, plumber and brazier there. He has fitted up one of them for Mr. Smith, a nurseryman of this town, for a new grapery erected by him this summer. It pleases him, and all who have seen it; and I consider it an excellent modification for heating small pits or frames.

The boiler for small pits should be capable of containing two gallons. Three-inch bore pipes should be suspended to the front of the pit or frame (*fig.* 17. *a*), and the feeder may contain about seven gallons of water, and be constructed of lead. The boiler and pipes of Mr. Smith's grapery are large; the boiler is of copper, and well riveted; it contains five gallons, and cost him only 4*l.*

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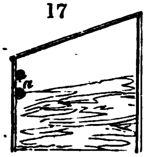

The upper pipes are 3½ in. in the bore, and also of copper; the return pipes are of lead, but formed with *union joints*, to counteract expansion. His feeder contains about thirty gallons, and works excellently. Mr. Smith says that the Staffordshire pipes, though apparently strong, will not answer the purpose, on account of their breaking so frequently; and moreover a joint in them cannot be easily replaced when they are what they call spigot and faucet joints, without taking all the rest down to it; and when metal pipes are so cheap, he thinks them greatly preferable. My copper pipes cost me 1*s.* 6*d.* per foot, and in the long run they will be found the cheapest and best.

My boiler, which cost 1*l.* 3*s.* 9*d.*, is constructed of strong copper, is oval, measures 18 in. by 12 in., and is in the form and size of such a dish-cover as is put over a roast goose. Mr. Smith's boiler is 28 in. by 18 in.; it rests upon its two ends over the fire, and the flames, mounting over the two sides, enter the flue or chimney at the top. The sketch (*fig.* 18.) will illustrate the kind of boiler which I mean.

In one of the pine-stoves here I have used steam-pipes, jointly with the fire-flue, for the last twenty years, and by so doing a great saving of fuel is effected. Unless ranges of houses are to be heated entirely by steam, it occasions a great waste of fuel if the flue and steam-pipes are not both employed; but in such establishments as those of Messrs.

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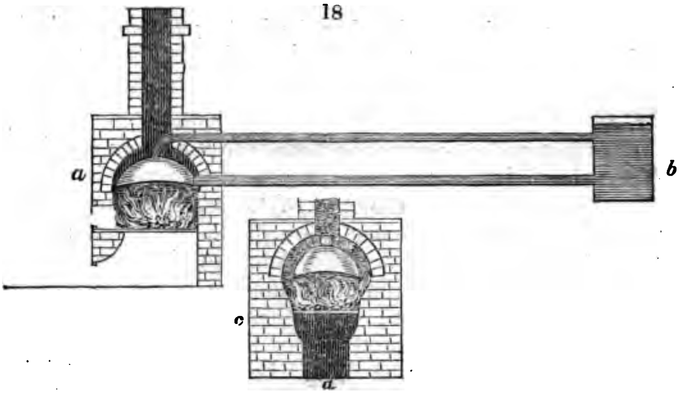

a, Side view of the boiler. *b*, The feeder. *c*, Front view of the boiler. *d*, The ash pit.

Loddiges, Messrs. Guntar, the late Mr. Grange at Kingsland, and the late Mr. Andrews of Vauxhall, the steam system must undoubtedly be preferable.

The pine-stove, which I have for the last twenty years heated jointly with the flue and steam (*fig.* 19.), I have now, at your suggestion, fitted up for heating by hot water; and as I still intend using only one fire, I consider that I shall gain in fuel. When I first thought of the steam method, I supposed that, while I heated my fire-flue, if I placed a boiler of water over the fire with a pipe attached for conveying the steam round the house, I should be throwing in so much additional heat to the house, while at the same time it took nothing from the heat that was carried along the flue; so that I should thus make a great saving in fuel, which I found to be the case. But, on considering the different action of steam and hot water, I have given the latter the preference; as, jointly with the fire flue, where only one house is to be heated, I find that I have an additional saving in fuel. Before the steam can operate, the water must boil; and, as soon as the thermometer attains the degree required, the fire must be damped; consequently the vapour ceases to rise, that which is in the pipes becomes condensed, and they soon get cold. When the mercury falls again, the water must again be made to boil, and so on. Not so the hot-water pipes. When once the water is heated in them, it rarely gets cold again. A little fire under the boiler will maintain a slow circulation in the pipes, which may be increased or diminished by the greater or less quantity of fuel.

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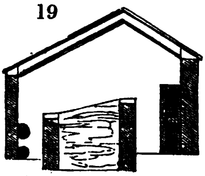

The fireplace and boiler may be safely brought into the house, from which arrangement an increase of heat is obviously acquired. I do not by any means consider it judicious to employ the hot-water pipes alone, and to throw the fire heat into the nearest chimney: in this case no more saving is effected than if the fire-flue were used by itself, and from my experience not so much.

My boiler (*fig.* 20. *a*) is placed in a recess at the end of the flue at the back part of the house, so that it occasions no inconvenience whatever. My feeder (*b*) is situated very handily at the hot-house door, and communicates with the boiler by pipes (*c*).

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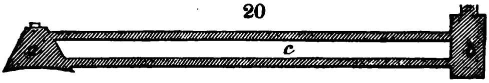

I shall here give you my opinion, as to where I think the hot-water system may be used with most advantage. In the first place, it is excellent, jointly with a fire-flue, in all kinds of forcing that require a temperature above or about 55°, unless for very small pits and frames, where it may be used singly, on account of the pipes taking up little room and being readily fitted in. In such places as the green-house, where nothing more than the frost is to be excluded, the old flue system is the best; and if it be properly managed, no inconvenience will arise from disagreeable smells or smoke. With regard to doing away with the fire-flue, on account of the water-pipes being sweeter, and more congenial to the health of the plants, I beg to remark that, if the fireplace and flues are properly constructed and kept properly clean, they are sufficiently sweet for any plant, provided that a proper degree of humidity is maintained.

I am not a little surprised that the method of heating by hot air has not been introduced into hot-houses, for which I think it well calculated. In my opinion the plan of Messrs. Summers of Bond Street might, with a little alteration for the particular purpose, be made more suitable for this object, to any number of houses, than any that I have yet seen.

Mr. Smith informs me that Mr. Oslar is now fitting up a hot-air stove to heat a room. It will require comparatively a mere handful of fuel; and is also considered sufficient to heat a hot-house 20 ft. by 12 ft. to a temperature of 80°. Mr. Smith says he is going to try another plan, which, he thinks, will answer the purpose of hot-houses much better, and prove far cheaper than hot-water pipes. The room in which he has tried his experiment loses but 3° of heat in twelve hours. Yours, &c.

Shobden Court, Nov. 1. 1829. JOHN MEARNS.

ART. V. *Observations on Windsor Castle.* By the late THOMAS WHATELY, Esq. Written previously to the Year 1772. With a Prefatory Letter by the Rev. W. T. BREE, by whom the Article was communicated.

Sir,

THE posthumous works of men of taste and genius seldom fail of being perused with a high degree of interest, even when they exhibit comparatively but little of the spirit and originality of the author's more finished productions published during his lifetime. The following observations, however, on Windsor Castle, appear to me to be intrinsically valuable in themselves, and worthy of their author; and I have no doubt they will prove doubly acceptable to your readers, as coming from the pen of the late Thomas Whately, Esq., the talented author of *Observations on Modern Gardening*, and *Remarks on the Characters of Shakspeare.* They were discovered among Mr. Whately's unpublished papers, and very probably might have been designed, had the author lived, to have been introduced into some future edition of *Observations on Modern Gardening.* This, however, is a mere conjecture of my own. For the copy which I now send you I am indebted to my friend, the Rev. Thomas Whately of Cookham, nephew of the author; who, in conjunction with his brother, Dr. Richard Whately, Principal of St. Alban's Hall, Oxford, has kindly permitted me to forward it to you for insertion in your Magazine. It should be remembered, that, as Mr. Whately died in 1772, his remarks on Windsor Castle must be considered as applying to the place previously to that period. What alterations may have subsequently taken place, and how far any of Mr. Whately's suggestions for improvement may have been adopted, are questions which I must leave to the decision of those who are better acquainted than myself with this magnificent domain.

Yours, &c.

Allesley Rectory, March 4. 1831. W. T. BREE.

OBSERVATIONS ON WINDSOR CASTLE.

A MORE magnificent and delightful royal residence can hardly be imagined than that of Windsor Castle. The eminence on which the castle stands is detached from every other, and advanced into the plain which it commands; it falls in a bold slope on one side, while it is easy of access on the other; and as the palace occupies almost all the brow, the whole hill seems but a base to the building. It rises in the midst of an enchanting country, and it is there the most distinguished spot: but though the situation is singular, it is not extravagant; it is great, but not wild. It is in itself noble, and all around it is beautiful.

The view from the terrace is not the most picturesque, but it is the gayest, that can be conceived. The Thames diffuses a cheerfulness through all the counties where it flows, and this is in itself peculiarly cheerful. It is luxuriantly fertile; it is highly cultivated; it is full of villas and villages; and they are scattered all over it, not crowded together; no hurry of business appears; and no dreary waste is in sight; country churches and gentlemen's seats are everywhere intermixed with the fields and the trees. Every spot seems improved, but improved for the purposes of pleasure; all are rural; none are solitary: and the amenity of the plain is at the same time contrasted with the rich woods in the Great Park, their height, their shade, and their verdure.

The prospect is the more interesting as all the environs of Windsor are classic ground. The forest prompted the first essays of Mr. Pope's muse; and Sir John Denham owes all his fame to his poem on *Cooper's Hill.* That beautiful eminence overlooks Runnemede, a place illustrious in our history. Behind it is Chertsey, the retreat of Cowley; before it Horton, the residence of Milton; and directly in front of the castle is Stoke churchyard, which Mr. Gray chose for the scene of his *Elegy* and the place of his burial.

The castle itself and its appendages abound with monuments of antiquity and of genius. The remains of chivalry everywhere occur in this seat of the Order of the Garter; and the rude achievements of Edward III., his family, and his peers, are proper decorations for the hall of his knights. The pride of Wolsey still appears in the chapel which he intended for his obsequies, and which might be the mausoleum of a race of kings with propriety. The terrace was built by Elizabeth; was the resort of her warriors and statesmen; and is a work worthy of her reign. Here Shakspeare laid the scene of his comedy, when the queen dictated the subject; and Datchet Mead still retains its name; and the sawpit, where the fairies lurked, may be traced; and the oak of Herne the Hunter is standing. The poets of later days have always haunted the spot, and have celebrated the delights of Windsor as refinements on the pleasures of Charles II.'s dissipated court, and the majesty of the seat as reflecting lustre on the trophies of Queen Anne's triumphant reign.

The grandeur of this regal residence is further enhanced by the establishments which depend upon it. The Order of the Garter owes its preeminence less to its antiquity, than to the purity observed in the dispensation of its honours; and the benevolent provision made for the poor knights is no disgrace to the institution. A sumptuous collegiate church, with accommodations for all its dignitaries, is within the walls of the castle; and the noble seminary of education at Eton seems not to be unconnected with the palace: it is a royal foundation, and it is, at the same time, the most beautiful and the most interesting object of the prospect.

The vast dimensions, also, and the style of the building, which, however deficient in some points of elegance and proportion, always retains an air of magnificence; the appropriation of distinct apartments to the several great officers of state, and the extent of the domains appendant on the castle; the groves in the Great Park, of eighteen miles in circumference, and the hills of the forest retiring to a distant horizon; are additional circumstances to distinguish this from all other royal residences, and concur to attract particular attention to it.

But the habitation is supposed not to be agreeable, because every contiguous spot is open to public resort. The defect is, however, not irremediable; for the terrace is certainly no thoroughfare, and perhaps, upon enquiry, the path through the Little Park to Datchet will appear to be held by sufferance, not by right; or, if otherwise, the return of the court to the castle would be so advantageous to the inhabitants of Windsor, that they would willingly consent to the necessary condition of turning the way. The Little Park might then be converted into a garden; and, as a garden, the extent would be considerable, the whole would be retired from the public eye, and parts of it out of sight of the castle.

It is full of large trees; and such of them as are ranged in straight rows are so fortunately situated that much devastation among them would not be necessary. They are chiefly near the verge of the park, and of use to conceal the boundary. Various plantations might be contrived within them, to break their regularity from every point where it could be offensive; and a thicket might fill the space between them and the wall. Along the avenues thus preserved entire, a private road might be carried, which would lead to different outlets towards the Great Park, Old Windsor, Datchet Bridge, and Eton Bridge, without once touching on the town of Windsor.

The space these avenues enclose divides itself into three great parts, requiring so many different styles of disposition. The declivities of the hill towards Frogmore and Datchet are comprehended within one of these divisions. The level from the foot of the hill towards Datchet constitutes the second, and all the plain which borders on the Thames from Datchet to Eton Bridge is included in the third.

The straight lines which cross either of them cannot remain; but many of the trees now in the rows may be saved; and these combined with such as are already detached, would prevent any poverty of wood while the younger plantations are growing. In the first of these divisions, however, no regularity interferes; and a finer subject than that hill cannot be desired for a garden.

It has height sufficient for the most abrupt falls, and extent for the gentlest declivities. The ground has different inclinations; ancient oaks and lofty elms are scattered about it, to crown the brows or to favour the descents; between them and above them appear the several towers of the castle, and in some points two fronts of it may be seen at once in perspective. The spot suggests such a variety of beautiful scenes, that the difficulty would be in the choice, not in the invention.

The beauties of which the second division is capable are of a tamer character. The castle is entirely hid, and inequalities of the ground cannot be considerable. The parts therefore must be small, and consist of openings separated by thickets constantly varied and continually succeeding each other. One, however, might perhaps be contrived, of greater extent and importance than the rest, by means of a little watercourse, which, I believe, at certain seasons runs along the bottom. This might be converted into a rivulet, too inconsiderable, indeed, for an object, but sufficient to furnish opportunities for making its banks delightful. Through the whole of the division, however, nothing very picturesque or striking can be expected, but a number of little spots may be devised, and all of them retired, elegant, and agreeable. A particular part of this flat may also be appropriated to a collection of such plants as are not fit to mix with others in continued plantations. The avenues here quit the wall at a much greater distance than is requisite for the thicket, and leave room for an enclosure sufficient to contain not only specimens, but numbers, of all those plants which are more apt to engage attention as individuals, than to contribute to effect in a group. The green-house and the stoves might be there, and every curious shrub, every tender and every delicate flower.

The plain between the castle and the Thames requires a bolder style of disposition, for it is a principal part of the view from the terrace, and should be adapted to the improvement of that view; for which purpose it should be thrown into one great lawn, to be broken by trees saved out of the present regular rows, and formed into clumps, with the assistance of younger plantations. The wall, which extends all along the bank of the river, should also be taken away, and a fosse substituted in its stead. The whole course of the Thames from Windsor to Datchet Bridge would then be let into the garden, and the grove in the play-fields at Eton would seem to belong to the lawn. Perhaps it would not be difficult to supply with water a winding channel cut across the opening, and conducted just under the castle, in such a form and of such a breadth as to seem a branch of the river. The home scene would then be irriguous and picturesque;

it would no longer be disgraced by the wall which now confines and disfigures it; and the still greater blemish in the prospect occasioned by the neighbourhood of the town might by degrees be corrected, if every vacant space which could at any time be purchased were planted with trees, to conceal the buildings, and interrupt their contiguity.

It would be a further improvement of the scene, if the steeps immediately below the terrace were covered with a thicket extending the whole length of the hill, and continued to different distances upon the plain. On the surface of a wood in such a situation, great varieties might be produced by massing the several tints of green; and if the trees and the shrubs were also arranged in forms of unequal growth, an appearance of irregularity might be given to the ground. The bare formal slopes would be converted into a rich foreground to the picture, and the precipice be softened into a broken and extended declivity.

But the greater effect of this plantation would be from below. It would there be a hanging wood with all the towers and all the spires of Windsor Castle rising above it. The scenes exhibited between the groves of a lawn, with such a noble boundary on one side, and bordered by the Thames on the other, would be the most magnificent in the garden.

A garden admitting so much variety of disposition would be fully adequate to the mansion; and yet this spot, both in extent and in character, is the least of the immediate appendages to the castle; for the Great Park, though not contiguous, is so clearly connected by its avenue, so near in prospect from the terrace, and so full in sight all the way which leads to it, that it always appears to be within the domain; and it is, indeed, the domain of a palace: all the parts are on a great scale; the eminences are considerable hills, the valleys are broad; the lawns are spacious; the woods are full of the largest trees; and the composition of the several scenes is, in general, equal to their dimensions. Few improvements are wanting, and they must be in a style both grand and simple. The most obvious is, to restore the head, and make some little alterations in the form, of the Virginia Water, which would then have the semblance of a beautiful river. In some other vale, about which the rising grounds are steep, and where the soil is always strong, the occasional currents from the hills might be collected into a vast lake, which should fill all the bottom. Some distinguished situations should also be chosen for buildings; and the sublimest ideas of architecture would not be misapplied on such objects as these scenes would require. The noblest temples of ancient Greece and Rome would, in general, be the most proper models, both in character and dimensions.

From all this grandeur the transition might be immediate into scenes of perfect rural simplicity, if the paddocks below the Great Park towards Old Windsor and Frogmore were converted into a farm. Many of the hedges and hedgerows which divided the old fields still remain; and the several divisions might be applied to different species of husbandry. Arable lands might be intermixed with pastures and meadows, and the succession of these be interrupted by a hop-ground or an orchard; or they might be distinguished by a cottage, a barn, or a dairy, a stack of corn, or a haymow. Copses and little woods frequently intervene, which would afford opportunities for further variety, and the whole is perfectly retired; no neighbour is in sight; no great road within hearing: and such a contrast to the magnificence which surrounds it, such a peaceable retreat from the parade of royalty, would occasionally be a most interesting part of the domain.

On the other side of the Great Park is the Forest, a vast tract, where the ground is often beautiful and sometimes romantic, but generally barren; and the home view is commonly dreary, though the offskip is frequently agreeable, but the soil will produce several kinds of trees. Large fir plantations are reckoned among the beauties of some of the finest countries in Europe; they would create a new character of country here, and be at the same time peculiar and ornamental. In many places our own forest trees would flourish, and derive from the contrast a singular effect; but it is not necessary to cover all the wild with wood. The forms of the ground, though bare, would in some spots be sufficiently interesting, and in others the dreariness of the waste might be broken by an object great and savage, and adapted to its character, but the building may be of the most ordinary materials and coarsest execution; for it is to be seen only from a distance, and it should appear to be rude and desolate. A representation of Stonehenge or Palmyra, under all these circumstances, would not be an extravagant attempt.

But the whole forest is not a desert; many parts are cultivated, lodges and seats are dispersed all about it, and roads might be conducted with ceaseless change through the enclosures, the wilds, and the woods, amidst scenes always interesting or beautiful, and from one agreeable prospect to another. This vast range of ridings extends every way over a space beyond a day's journey in circuit, and is still within the domain. The whole extensive royalty lies all together, and presses close up to the palace; it differs in every circumstance of character and disposition from the plain on the other side of the castle; and all this various country is within a small distance of the capital, but free from any appearance of neighbourhood to a city.

The different characters of elegance and grandeur which distinguish it meet on the banks of the river, which animates and reflects all their beauties. The hills shelve into it on one hand, it fertilises the plain on the other; and, whilst it is winding among shocks of corn, or watering a mead, the towers of the castle, the groves in both the parks, and the heights of the forest, are in view. Little islands frequently divide the stream; and if one or two of these were purchased, at some distance above and below Windsor, a few trees and airy buildings would render them refreshing retreats on a summer's day, and delightful objects of excursion on the water. They would also extend the idea of domain far beyond its present bounds, and the royalty would then comprehend the means of every enjoyment which the country can afford, whether sought in the pursuits of activity or the relaxation of indolence, the quiet of private life or the splendour of majesty.

Art. VI. *A Selection of Plants, for forming, in the smallest Space, a Representative System of the whole Vegetable Kingdom; with a View to facilitate the Acquisition of the most comprehensive Knowledge of Systematic, Physiological, and Practical Botany, with the least Degree of Study, and in the shortest Period of Time.* By the Conductor.

We have long had it in view to show how, in any garden, a maximum of botanical instruction, interest, and enjoyment, may be exhibited in a minimum of space. We have hinted at the subject in several passages in preceding volumes (Vols. I. p. 461. II. p. 300. and p. 309, &c.) which the reader is requested to peruse; and we are now enabled to carry our ideas into effect, in consequence of the publication of Lindley's *Introduction to the Natural System of Botany*, of our own *Hórtus Británnicus*, and of Parts I. and II. of our *Illustrations of Landscape-Gardening.**

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* The first and second parts of this work contain the elements of all that are to follow; and more especially as it relates to the subject before us, viz. diagrams for the formation of arboretums in lines along the margins of walks, and in circles on lawn; and for Jussieuean herbaceous grounds in circles. These parts also contain a plate showing the application of *both systems of diagrams* to the laying out of a residence of ten acres. We

Ornamental plants may be distributed in gardens in various ways, and for various purposes. These are all technically included under Ornamental Gardening and Landscape-Gardening. The arrangements of ornamental gardening are chiefly calculated to gratify the lovers of flowers, and of trees and shrubs as objects of beauty attractive to the general observer; those of landscape-gardening require space as an essential concomitant, and are calculated to gratify those who have cultivated a taste for the beauties of landscape scenery, such as grouping, light and shade, effect, expression, and character. Ornamental gardening is for all, without exception, who occupy a plot of ground; landscape-gardening for the man of cultivation and taste, who possesses acres to adorn with turf, water, and trees. That description of gardening which contains a maximum of interest and enjoyment in a minimum of space may be denominated scientific ornamental gardening *; and of this species is the variety known to botanists as the Jussieuean or Natural System.

Most gardeners know, that, according to the Jussieuean or natural system of botany, the species composing the vegetable kingdom are distributed into groups; all the species of a group resembling each other in the greatest number of points, not only of exterior appearance, but of anatomy, physiology, chemical qualities, medical properties, and economical uses.

This being the case, it will readily be conceived that any one plant of a group may be taken as a representative of the essential appearances, qualities, properties, and uses of the whole group; and that, consequently, by taking one plant from every group composing the vegetable kingdom, and bringing them together in one plot or garden, that assemblage will form a complete representative system of the whole of this kingdom. In order to be convinced of this, and to see and understand the great beauty and utility of this system thoroughly, it is necessary to have recourse to Lindley's *Introduction*; but for the general reader it may be sufficient here to refer to our *Hórtus Británnicus*, where he will find

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regret that the smallness of an 8vo page will not admit of our giving these diagrams so as to render them at all intelligible. The reader who is already master of the natural system need not have recourse to them, unless for the purpose of actually laying out a garden or residence.

* Assuming the principal divisions of gardening to be, 1. Horticulture, the culture of fruits and culinary vegetables: 2. Floriculture, the culture of flowers for general ornament, as in ornamental gardening; and for scientific purposes, as in botanic gardening: 3. Arboriculture: 4. Landscape-gardening. See *Encyclopædia of Gardening*, and *Quarterly Review*, vol. xxiv. p. 400.

that the Natural Order Gramíneæ contains 1071 species; but of these species, being all grasses, every one will allow, that any single one would give a tolerably correct idea of all the rest. The same may be said of all the other orders, with more or less obvious truth. In some very large orders the truth may not be so obvious to a general observer; but such orders being divided into tribes, an individual of each tribe will give to every one as clear an idea of that tribe, as a single grass does of all the Gramíneæ.

As far as all the plants in the world have been described by botanists, those which may be cultivated in gardens in the latitude of Great Britain are included under 267 orders. (*Lindl.*) All the plants known to botanists have not yet been introduced into Britain; but enough have been introduced to illustrate 215 orders, as enumerated in our *Hórtus Británnicus,* from p. 492. to 542. Hence, 215 plants would give a general idea of about eight tenths of all the plants of the world, as far as they are yet known and described. That division of plants known to botanists as flowerless, or with concealed flowers, with the exception of the ferns and one or two other orders, are left out of view in this calculation, as unfit for cultivation.

The garden plants of Britain, as enumerated in our *Hórtus Británnicus,* coming partly from warmer climates, are in part cultivated in hot-houses, though chiefly in the open air. As the latter is much the easier mode of cultivation, on account of the first cost of the plants and their future management being less expensive; the greater number of orders which can be so illustrated the better. All plants are either ligneous or herbaceous; and some orders consist wholly of one description, while other orders contain both. As hardy herbaceous plants occupy much less space than hardy ligneous plants, the greater the number of orders that can be illustrated by them, the less will be the space occupied.

By the table which follows it will be seen that 114 orders may be represented by hardy herbaceous plants, 36 by hardy trees and shrubs, 33 by green-house plants, and 36 by hot-house plants. By allowing an average of one square foot to each herbaceous plant, and one square yard to each hardy tree or shrub, the space occupied by them will be 438 square feet, or one ninetieth of an acre. By allowing one square foot for each of the green-house plants, a pit 9 ft. by 4 ft. sunk in dry soil, or in wet soil built with hollow walls, will preserve them through the winter, as well as any green-house: making the same allowance for hot-house plants, another pit 9 ft. by 4 ft. heated by a flue or pipe of hot water, by a bed of stones heated by steam in Mr. Hay's manner, by a bed of tan within, or by exterior linings of dung, will preserve them equally well. The space requisite for the two pits, the arboretum, and the herbaceous ground, amounts to not quite one eightieth of an acre, or, with adequate space for walks, say one fortieth of an acre.

If the trees and shrubs of the arboretum are planted along the two sides of a double trellis, and trained against it, they need not occupy more than half the number of yards above mentioned, and the herbaceous plants may be planted in a border on each side of the double trellis. This we shall show, in a future Number, by an engraving of the double trellis and border for an incipient Jussieuean arrangement formed in our own little garden.

So much for the manner of representing all the orders of the flowering plants of the vegetable kingdom, cultivated in Britain, in the smallest possible space. We shall next show how much space would be required to represent not only the orders, but all the tribes.

By turning to the last page of the table, it will be seen that the number of orders and tribes of hardy trees amounts to 58; and the number of orders and tribes of herbaceous plants, including twenty-one groups of rootless Cellulàres, amounts to 260. Allowing, therefore, the same space as before, viz. one square yard for each tree, and one square foot for each herbaceous plant, the space occupied by them would be 782 square feet, or not quite one fiftieth of an acre. By referring to the table below, the number of groups of hot-house and green-house plants to be illustrated will be found to be 146, and consequently the number of square feet of pit requisite to contain them will be 146, viz. a pit 25 ft. by 6 ft.

If the knowledge of an object increases the pleasure derivable from it, and if those who cultivate ornamental plants wish to enjoy as much entertainment and instruction from them as possible, would it not be well worth their while, instead of purchasing and cultivating plants at random, without reference to any other qualities than their being fragrant, evergreen, shady, or otherwise ornamental, to purchase and cultivate such plants as would represent more or less of the whole vegetable kingdom? Would not this kind of cultivation prove highly instructive, as well as entertaining; and would it not form an important source for the instruction of young persons in botanical knowledge? To save repetition, the reader is requested to reperuse the articles at p. 300. and at p. 309. of Vol. II.

Every one may not be able to afford to purchase representatives of the whole 464 orders and tribes of the hardy plants cultivated in Britain; but even fifty or a hundred of such orders illustrated in a bed, a border, a small flower-garden, or a small shrubbery, would surely form a scene of greater interest than an assemblage collected without any definite object. Forming such representative systems may be somewhat difficult and expensive at first, as compared with the random mode of border and shrubbery planting, in which whatever comes cheapest is taken; but as soon as there is a demand in the nurseries for representative plants, their cultivation will be increased, till they become as cheap as any others.

In the following table, the first plant put down under each order and tribe, is always as far as we have been able to determine, the most easy of culture, the cheapest or readiest to be met with, and that which occupies the least space; preferring, amongst herbaceous plants, perennials to annuals. The second plant put down is generally one of the handsomest of the order or tribe. Under the column of herbaceous plants a few additional names are given from the Epsom nursery, with the prices; and any prices added to either the first or second name, or both, are also from the same nursery. These have been selected by that botanist of unparalleled ardour, Mr. Penny, and are always handsome, select, and appropriate. All the herbaceous plants (if there be exceptions, we are not aware of them,) may be purchased in the Epsom nursery; and all the trees and shrubs, and most of the house plants, we believe, may be had of Messrs. Loddiges. To these gentlemen we are indebted for the selection of a few of the house plants.

A few orders and tribes (12) can only be illustrated by plants that grow in water; for which purpose an earthen jar, of 4 or 6 in. diameter, may be sunk in the ground. The stronger-growing trees and shrubs, and even the strong-growing herbaceous plants, may in very small gardens be kept dwarf, by being planted in old fruit-jars, or in garden-pots without perforated bottoms. Hardy plants requiring peat, or any other peculiar soil, should also be kept in pots plunged to the brim.

Foreign readers, and especially our friends in America and Australia, who may be desirous of forming small natural arrangements, will, we believe, be able to procure from Vilmorin and Co. of Paris, and G. Charlwood of London, seeds to illustrate at least 100 orders of herbaceous plants, 20 orders of trees, and probably a few orders of green-house and hot-house plants. Even a few orders illustrated will prove far more interesting to the scientific possessor, than the acquisition of plants merely because they are new, rare, or what is called beautiful. The true beauty of plants, as of every thing else, lies in the mind; and by the natural system this is cultivated to the utmost.

Those who have not a garden, or who cannot afford to purchase living plants, may yet be enabled to procure from their friends, or to purchase from botanical collectors, dried specimens. Rather than accumulate a great number of these at random, we would recommend selection with a view to the illustration of the natural orders. Such specimens may either be kept in drawers, or in volumes done up in Mr. Toward's manner. (Vol. IV. p. 468.) Plates II. VI. and VII. of our *Illustrations of Landscape-Gardening* are calculated to show what ought to be the comparative size of the drawers, or of the divisions, or of a volume, for each order, so as to preserve a due proportion between the orders, as to their relative extent, and of their extent relatively to the number of specimens procurable in Britain. We may, probably, in a future Number, give a plan for a system of drawers and a volume, on the smallest scale: in the meantime, Mr. Stephen Watts, joiner, Kensington Gravel Pits, London, knows how to form a system of drawers; and Mr. Bayley, bookbinder and stationer there, to prepare a volume or volumes for a Hortus Siccus. The prices of both these tradesmen are moderate.

In future Numbers we shall give plans of miniature natural systems for suburban gardens; for flower-gardens to country residences; for shrubberies round kitchen-gardens; and for pleasure-grounds. In the meantime, we invite all ingenious gardeners to lend us their assistance, and to show that they understand what we mean, by furnishing plans themselves, and thus abridging our labour.

The names of the plants in the table are given from our *Hórtus Británnicus*, and the original authorities for them will be there found.

The first column in the following table contains the names of hardy herbaceous plants, and of such hardy ligneous plants as do not exceed 2 ft. in length; and may, therefore, be introduced into a herbaceous arrangement. The number of orders so exemplified is 114; of orders and tribes, 260.

The second column contains the names of hardy trees and shrubs above 2 ft. in height, exemplifying 36 orders not exemplified in the first column; and 58 orders and tribes also not there exemplified.

The third column contains the names of green-house and frame plants; ligneous or herbaceous, exemplifying 33 orders, and 64 orders and tribes not exemplified in the two preceding columns.

The fourth column contains the names of hot-house plants, exemplifying 36 orders, and 82 orders and tribes, not exemplified in the preceding columns; and thus completing the exemplification of the 219 orders, or 464 orders and tribes, composing the natural arrangement of the *Hórtus Británnicus.*

The names of the orders are preceded by Roman numerals, and the names of both the orders and the tribes are followed by Arabic figures: the former enumerating the orders in series; the latter, the orders and tribes in series, and their total amount. The numbers in parentheses (1), (2), &c., before the plants exemplifying certain tribes or orders in each column, show the number of orders most conveniently exemplified by that column. The figures not in parentheses, 1., 2., 3., &c., in each column, show the number of orders and tribes exemplified by that column, in a regular series, chiefly for garden purposes.

In planting collections to exemplify the orders only, whether in the open air or in houses, the number of the order should be placed over the name on the label; and the number denoting its place in the herbaceous ground, arboretum, frame, green-house, or stove, with the signs of the three latter before the name, thus: —

VI. (2.) *Berberídeæ.*	or	II. (1.) ⊔ Dilleniàceæ Dillèneæ.

In planting collections to exemplify the tribes as well as the orders, the number of the order should be placed over the name; the number denoting its place in the open garden or house before it, and the number denoting its place in the system after it, thus: —

VI. 6. *Berberídeæ.* 13. 30.	or	IV. 2. ▭ *Anonàceæ.* 10. 22.

It might also be desirable, whether in naming a system of orders only, or a system of both orders and tribes, to place below the name the page in Lindley's *Introduction* (30. and 22. as above) in which the order or tribe is treated of, to facilitate the study of each order on the spot in which the plant grows.

These numbers will also be useful in arranging herbariums, in giving orders to nurserymen, and in making exchanges of either dried or living plants, seeds, or drawings.

The abbreviations adopted in the following table are those of the *Hórtus Británnicus*, viz.: —

🌳 Deciduous tree.
🌲 Evergreen tree.
🌴 Palm tree.
☁ Deciduous shrub.
✺ Evergreen shrub.
⌓ Deciduous under-shrub.
⌔ Evergreen under-shrub.
∫ Deciduous twiner, ligneous or herbaceous.
∮ Evergreen twiner, ligneous or herbaceous.
⊺ Deciduous climber, ligneous or herbaceous.
⊥ Evergreen climber, ligneous or herbaceous.
⌁ Deciduous trailer, ligneous or herbaceous.
∽ Evergreen trailer, ligneous or herbaceous.
⋇ Deciduous creeper, ligneous or herbaceous.
⍦ Evergreen creeper, ligneous or herbaceous.
⚘ Deciduous herbaceous plant.
£ Evergreen herbaceous plant.
🌾 Grass.
♉ Bulbous plant.
✳ Fusiform-rooted plant.
✱ Tuberous-rooted plant.
≛ Aquatic.
ℰ Parasite.

△ Perennial.
◑ Biennial.
○ Annual.
⎦ Frame.,
⊔ Green-house.
▭ Bark, or moist, stove.

First Grand Division, VASCULA`RES.

Plants which, when anatomised, are found to contain both spiral vessels and cellular tissue.

Class I. DICOTYLEDO`NEÆ.

Plants with two or more opposite cotyledons; always web or net leaved.

Subclass I. THALAMIFLO`RÆ. Stamens under the pistillum.

Order I. *Ranunculàceæ.* Tribe 1. *Clematideæ.* 1.

(1) 1. *C*lématis integrifòlia, £ 1*s.*; críspa, ⚘

Ranunculàceæ. Tribe 2. *Anemòneæ.* 2.

2. Hepática trìloba, ⚘ *A*nemòne *Pulsatílla*, ⚘; pavonìna ✱ 1*s.* Adònis vernàlis, ⚘ 1*s.* 6*d.*

Ranunculàceæ. Tribe 3. *Ranuncùleæ.* 3.

3. *R*anúnculus amplexicaúlis, ⚘; parnassiæfòlius, ⚘; *f*umariæfòlius, ⚘ 2*s.* 6*d.*

Ranunculàceæ. Tribe 4. H*ellebòreæ.* 4.

4. *H*elléborus nìger, ⚘; lìvidus, £. Cóptis trifòlia, £ 1*s.* 6*d.* Aquilègia glandulòsa, ⚘ 2*s.* 6*d.*

Ranunculàceæ. Tribe 5. P*æoni*àceæ. 5.

5. *Pæònia* tenuifòlia, ✱; anómala, ✱; edùlis, ✱ 2*s.* 6*d.* Macròtys racemòsa, ⚘ 1*s.* 6*d.*

Order II. *Dilleni*àceæ. Tribe 1. *Delimàceæ.* 6.

| | | 1. Delìma sarmentòsa, ⊥. Tetrácera obovàta, ⊥

*Dilleni*àceæ. Tribe 2. *Dillèn*eæ. 7.

| | (1) 1. Hibbért*ia* grossulariæfòlia, ✺; dentàta, ✺

Order III. *Magnoli*àceæ. Tribe 1. *Illicièæ.* 8.

| | 2. Illìcium floridànum, ✺; parviflòrum, ✺

*Magnoli*àceæ. Tribe 2. *Magnoli*èæ. 9.

| (1) 1. Magnòl*ia* obovàta, ☁; conspícua, ☁

Order IV. Anonàceæ. 10.

| (2.) 2. *Asímina* trìloba, ✺; pygmæ`a, ⌓

Order V. *Menispermàceæ.* Tribe 1. *Menispérmeæ.* 11.

| (3) 3. Menispérmum canadénse, ∫; Wendlánd*ia* *p*opulifòlia, ∮

Menispermàceæ. Tribe 2. *Schizándreæ.* 12.

| | 3. Schizándra coccínea, ⍦. .....

Order VI. Berberídeæ. 13.

(2) 6. *E*pimèdium alpìnum, ⚘ 1*s.* *Le*óntice *t*halictröìdes, ✱ 1*s.* 6*d.* Diphyllèia cymòsa, ⚘ 1*s.* 6*d.*

Order VII. *Podophyllàceæ.* 14.

(3) 7. Podophýllum peltàtum, ⚘ 1*s.* Jefferson*ia* diphýlla, ⚘ 2*s.* 6*d.*

Order VIII. *Hydropeltideæ.* 15.

| | (2) 4. Hydropéltis purpùrea, △ ≛. ......

Order IX. N*ymphæàceæ*. Tribe 1. Nelumbòneæ. 16.

2. *Nelúmbium* speciòsum, △ ≛; lùteum, △ ≛

N*ymphæàceæ*. Tribe 2. N*ymphæèæ*. 17.

(4) 8. *N*ùphar lùtea, △ ≛ 1*s* 6*d*. *N*ymphæ̀a álba, △ ≛ 2*s*. 6*d*.

Order X. *Sarraceni*èæ. 18.

(5) 9. Sarracèn*ia* purpùrea, £ 2*s*. 6*d*.; variolàris, £ 3*s*. 6*d*.

Order XI. P*apaveràceæ*. 19.

(6) 10. *P*apàver nudicaúle, ♃; cròceum, ♃ 1*s*. 6*d*.; alpìnum, £ 2*s*. 6*d*.

Order XII. F*umariàceæ*. 20.

(7) 11. *C*orydàlis bulbòsa, ♉; tuberòsa, ♉; nóbilis, ⚘ 1*s*. 6*d*. Diélytra exímia, ♃ 1*s*.

Order XIII. *Cruciferæ*. Suborder 1. *Pleurorhìzeæ*. Tribe 1. A*rabìdeæ*, or *Pleurorhìzeæ Siliquòsæ*. 21.

(8) 12. *A*'rabis álbida, £; collìna, £ 1*s*. 6*d*. Dentària digitàta, ♃ 2*s*. 6*d*.

Cruciferæ. *Pleurorhìzeæ*. Tribe 2. *Alyssìneæ*, or *Pleurorhìzeæ Latiséptæ*. 22.

13. Aubrièt*ia* purpùrea, £. Vesicària utriculàta, £ 1*s*. 6*d*. *A*lýssum montànum, £ 1*s*. 6*d*.

Cruciferæ. *Pleurorhìzeæ*. Tribe 3. *Thlaspìdeæ*, or *Pleurorhìzeæ Angustiséptæ*. 23.

14. *I*bèris sempervìrens, ♄; Tenoreà*na*, £ 1*s*. 6*d*. Hutchíns*ia* alpìna, £ 1*s*. 6*d*.

Cruciferæ. *Pleurorhìzeæ*. Tribe 4. *Euclidièæ*, or *Pleurorhìzeæ Nucamentàceæ*. 24.

15. Euclídium syrìacum, ○. Octhòdium ægyptìacum, ○

Cruciferæ. *Pleurorhìzeæ*. Tribe 5. *Anastaticeæ*, or *Pleurorhìzeæ Septulàtæ*. 25.

16. Anastática hierochuntìna, ○. ......

Cruciferæ. *Pleurorhìzeæ*. Tribe 6. Cakilíneæ, or *Pleurorhìzeæ Lomentàceæ*. 26.

17. *Cakìle* marítima, ○. Chorìspora tenella, ○

Cruciferæ. Suborder 2. *Notorhìzeæ*. Tribe 7. *Sisýmbreæ*, or *Notorhìzeæ Siliquòsæ*. 27.

18. *H*ésperis matronàlis ♃; trìstis, ♃ 1*s*. 6*d*.; excélsa, ♃ 1*s*. 6*d*.

Cruciferæ. *Notorhìzeæ*. Tribe 8. *Camelìneæ*, or *Notorhìzeæ Latiséptæ*. 28.

19. Camelìna satìva, ○; dentàta, ○

Cruciferæ. *Notorhìzeæ*. Tribe 9. L*epidìneæ*, or *Notorhìzeæ Angustiséptæ*. 29.

20. *L*epídium satìvum, ○; latifòlium, ♃. Æthionèma membranàceum, £ 2*s*. 6*d*.

Cruciferæ. *Notorhìzeæ*. Tribe 10. I*satìdeæ*, or *Notorhìzeæ Nucamentàceæ*. 30.

21. *I*sàtis tinctòria, ⦶; latisìliqua, ⦶

Cruciferæ. *Notorhìzeæ*. Tribe 11. *Anchonièæ*, or *Notorhìzeæ Lomentàceæ*. 31.

22. Goldbàch*ia* tetragòna, ○. Sterígma tomentòsum, ⦶

Cruciferæ. Suborder 3. *Orthoplòceæ*. Tribe 12. B*rassìceæ*, or *Orthoplòceæ Siliquòsæ*. 32.

23. Diplotáxis tenuifòlia, £. Moricánd*ia* arvénsis, £ 1*s*. 6*d*.

Cruciferæ. *Orthoplòceæ*. Tribe 13. V*élleæ*, or *Orthoplòceæ Latiséptæ*. 33.

24. *V*élla Pseudo-*C*ýtisus, ✸. *Carrichtèra V*éllæ, ○

Cruciferæ. *Orthoplòceæ*. Tribe 14. *Psychìneæ*, or *Orthoplòceæ Angustiséptæ*. 34.

25. Psychìne stylòsa, ○. ......

Cruciferæ. *Orthoplòceæ*. Tribe 15. Zílleæ, or *Orthoplòceæ Nucamentàceæ*. 35.

26. *Calepìna* Corvìn*i*, ○. Muricària prostràta, ✱ ○

Cruciferæ. *Orthoplòceæ*. Tribe 16. R*aphàneæ*, or *Orthoplòceæ Lomentàceæ*. 36.

27. *C*rámbe marítima, ♃; tatárica, ♃; cordifòlia, ♃ 1*s*. 6*d*.

Cruciferæ. Suborder 4. *Spirolòbeæ*. Tribe 17. B*uniàdeæ*, or *Spirolòbeæ Nucamentàceæ*. 37.

28. *B*ùnias orientàlis, ♃; Erucàgo, ○

Cruciferæ. *Spirolòbeæ*. Tribe 18. *Erucarièæ*, or *Spirolòbeæ Lomentàceæ*. 38.

29. Erucària aléppica, ○; tenifòlia, ○

Cruciferæ. Suborder 5. *Diplecolòbeæ*. Tribe 19. *Heliophìleæ*, or *Diplecolòbeæ Siliquòsæ*. 39.

30. Helióphila pilòsa var. incìsa, ○; crithmifòlia, ○

Cruciferæ. *Diplecolòbeæ*. Tribe 20. *Subularièæ*, or *Diplecolòbeæ Latiséptæ*. 40.

31. Subulària aquática, ○. ......

Cruciferæ. Suborder 6. *Schizopetàleæ.* 41.

32. Schizopétalon Walkèri, ○ . . . . . .

Order XIV. *Resedàceæ.* 42.

(9) 33. *R*esèda odoràta, ○ ; undàta, ⚘ ; álba, ◐ 1*s.*

Order XV. Datísceæ. 43.

(10) 34. *Datisca* cannábina, ⚘ 1*s.* 6*d.* ; hírta, ⚘

Order XVI. *Capparídeæ.* Tribe 1. *Cleòmeæ.* 44.

(11) 35. Cleòme pubéscens, ○ . Perítoma serrulàta, ○

Capparídeæ. Tribe 2. *Cappàreæ.* 45.

| | 5. *C*ápparis spinòsa, ♣ ⌋ ; ægyptìaca, ♣ ⌋

Order XVII. *Flacourt*iàneæ. Tribe 1. *Patrisièæ.* 46.

| | | 3. Ryàn*ea* speciòsa, ♣ ⌋ . . . . . .

*Flacourt*iàneæ. Tribe 2. *Flacourtièæ.* 47.

| | | 4. Flacoúrt*ia* *Ramóntchi,* ♣ ; inérmis, ♀

*Flacourt*iàneæ. Tribe 3. Kiggelar*ièæ.* 48.

| | (3) 6. Kiggelàr*ia* africàna, ♀ ; integrifòlia, ♀

Order XVIII. Bixíneæ. 49.

| | (1) 5. *Bíxa Orellàna,* ♀ *Próckia* crùcis, ♣

Order XIX. *Cistíneæ.* 50.

(12) 36. Heliánthemum Tuberària, £ ; canadénse, ⚘ 3*s.* 6*d.*

Order XX. V*iolarièæ.* Tribe 1. V*iòleæ.* 51.

(13) 37. *V*ìola trícolor, £ ; flabellifòlia, ⚘ ; pedàta, ⚘ 2*s.* 6*d.* ; pubéscens, ⚘ 1*s.* 6*d.*

V*iolarièæ.* Tribe 2. *Alsodíneæ.* 52.

| | | 6. Alsodèa latifòlia, ♣. Ceranthèra subintegrifòlia, ♣

V*iolarièæ.* Tribe 3. *Sauvàgeæ.* 53.

| | | 7. Sauvagès*ia* eréctа, ○ ; nùtans, ○

Order XXI. *Droseràceæ.* 54.

(14) 38. *P*arnássia palústris, ⚘ ; caroliniàna, ⚘ 1*s.* 6*d.* Drósera ánglica, £ 1*s.* 6*d.*

Order XXII. P*olygàleæ.* 55.

(15) 39. *Pol*ýgala vulgàris, £ 1*s.* ; Sénega, ⚘ 5*s.* ; Chamæbúxus, ♣.

Order XXIII. *Tremándreæ.* 56.

| | (4) 7. Tetrathèca *e*ricæfòlia, ♣ ; *t*hymifòlia, ♣

Order XXIV. *Pittospòreæ.* 57.

| | (5) 8. Pittósporum *Tobìra,* ♣ ; undulàtum, ♣.

Order XXV. *Frankeni*àceæ. 58.

(16) 40. Frankèn*ia* læ̀vis, ♣ 1*s.* 6*d.* ; pulverulénta, ○

Order XXVI. *Caryophýlleæ.* Tribe 1. *Silèneæ.* 59.

(17) 41. Silène alpéstris, £. Diánthus gigantèus, £ 2*s.* 6*d.* Saponària *o*cymöìdes, ⚘ 1*s.* 6*d.*

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(36) 79. *Loàsa* nìtida, ○. Blumenbàch*ia* insígnis, ¥ 1*s.* 6*d.*

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(37) 80. Turnèr*a c*istöìdes, ○.

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(38) 81. Claytòn*ia a*lsinöìdes, ¥; sibírica, ¥; virgínica, ✱ 1*s.* 6*d.*; caroliniàna, ✱ 2*s.* 6*d.*

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(39) 82. *Telèphium* Imperàt*i*, ⚘ 1*s.* 6*d.* Corrigìola littoràlis, ○

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| 27. Nitràr*i*a Schobèr*i*, ☗; cáspica, ☗

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| | (14) 37. Cèreus *p*hyllanthöìdes, ☗; *C*áctus speciosíssima, ☗

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| | (16) 39. Bauèr*a r*ubiæfòlia, ■ ; hùmilis, ■

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| | 40. Drùs*a* oppositifolia ♀ △. .....

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93. *B*ùnium flexuòsum, ✱ ; Bulbocástanum, ✱ Z*ízia* aúrea, ⚘ 1*s*. 6*d*.

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94. *A*thamánta crètensis, ⚘. *M*èum *a*thamánticum, ⚘ 1*s*. 6*d*.

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98. *S*ìler trílobum, ⚘. *A*gasýllis caucásica, ⚘

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103. *C*hærophýllum sylvéstre, ⚘. *M*ýrrhis odoràta, ⚘

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104. *S*mýrnium *O*lusàtrum, ⊙; perfoliàtum, ⊙

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(44) 106. Arália racemòsa, ⚘; nudicaúlis, ⚘. *P*ánax trifòlia, ⚘ 2*s*. 6*d*.

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(45) 107. *C*órnus canadénsis, £ 1*s*. ; herbàcea, £. Trióstenm perfoliàtum, ⚘ 2*s*. 6*d*.

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| (20) 29. *V*íscum álbum, male and female, £. ?*Aúcuba* japónica, ■

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| | | 62. Hamé*llia* pàtens, ■; chrysántha ■

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109 Aspérula odoràta, ⚘; arcadiénsis, ¥ 1*s*. 6*d*.

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(47) 110. *Valeriàna* dioíca, ¥; montàna, ⚘. Patrín*ia* scabiosæfòlia, ⚘ 2*s*. 6*d*.

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(48) 111. Asterocéphalus Webb*iànus*, ¥ 1*s*. 6*d*.; élegans, ⚘ 1*s*. 6*d*. Scabiòsa caucásica.

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| | | (22) 63. Acicárpha spatulàta ¥. ......

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(49) 112. *H*ieràcium aúreum, ⚘; aurantìacum, ¥. Prenánthes purpùrea, ⚘ 1*s*. 6*d*.

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113. Tróximon glaúcum, ⚘ 1*s*. 6*d*.; cuspidàtum, ⚘

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114. Achyróphorus radicàtus, ⚘; maculàtus, ¥. Serìola glaùca, ¥ 1*s*. 6*d*.

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116. Picrídium tingitànum, ○. *Scorzonèra* hispánica, ⚘. Arnopògon Dalechámp*ii*, ⚘ 1*s*. 6*d*.

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117. *C*ichòrium *I*'ntybus, white, ⚘; *I*'ntybus ⚘, 6*d*. *S*cólymus hispánicus, ⚘

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118. *C*atanánche cærùlea, ⚘; lùtea ○

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119. *P*erdícium Anándria, ⚘. Chaptàl*ia* tomentòsa, ⚘

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120. Carl*ìna* acaúlis, ⚘. *C*entaurèa nervòsa, ⚘; aúrea ⚘, 1*s*. 6*d*. C*á*rduus alàtus, ⚘ 1*s*. 6*d*.

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121. *E*chìnops *R*ìtro, ⚘ 1*s*. 6*d*.; ruthénicus, ⚘

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122. *I*'nula glandulòsa, ⚘ 1*s*. 6*d*. Vernòn*ia* noveboracénsis, ⚘. *Liàtris* scariòsa, ⁂

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123. Antennària dioíca, *D. Don* ♀≈; triplinérvis, ⚘ 1*s*. 6*d*. Ammòbium alàtum, ⚘ 1*s*.

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124. *A'ster* alpìnus, ⚘; canus, 1*s*. 6*d*. *Erígeron bellidifòlius*, ¥; glabéllus, ¥ 1*s*. 6*d*.

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125. *Eupatòrium* maculàtum, ⚘; *ageratöìdes*, ⚘ 1*s*. 6*d*. Stèv*ia* purpùrea, ⚘ ⎯| 1*s*.

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126. *Tussilàgo* álba, ⚘; alpìna ¥ 1*s*. *Senècio Doronicum*, ⚘. *Tagètes* flórida, ⚘ 2*s*. 6*d*.

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127. Galárd*ia* bícolor, ⚘; aristàta, ⚘ 2*s*. 6*d*. Heliánthus diffùsus, ⚘. Echinàcea speciòsa, ⚘ 1*s*. 6*d*.

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128. *P*arthènium integrifòlium, ⚘ 1*s*. 6*d*. *I'va* axillàris, ⚘

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129. *A*chillè*a* tomentòsa, ¥; Clavénnæ, ⚘ 1*s*. 6*d*. Anácyclus *P*yrèthrum, ¥ 2*s*. 6*d*.

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(50) 130. Lobèl*ia* syphilítica, ⚘ 1*s*.; cardinàlis, ⚘ 1*s*. 6*d*.; fúlgens, ⚘

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| | (19) 46. Stylídium graminifòlium, ¥; adnàtum, ¥

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| | (20) 47. Scæ'vola microcárpa, ¥. Goodèn*ia* ovàta, m; grandiflòra, m

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(52) 131. Campánula pátula, ⚘ 1*s*. 6*d*.; carpáthica, ⚘; punctàta, ⚘ 1*s*.

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| | | (23) 64. Gloxín*ia* speciòsa, ⚘. Gesnèr*ia* bulbòsa, ⚘

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| 32. *V*accínium Vitis Idæ'a, m; amœ'num, m

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| 33. *E*rica cárnea, m; ciliàris, m

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| 34. *R*hodòra canadénsis, ♣; Kálm*ia* glaúca, m

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| | (21) 48. Penæ'*a* mucronàta, ♣; squamòsa, ♣

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| (21) 35. Halès*ia* tetráptera, ♣; díptera, ♣

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| (24) 38. *Syrínga* pérsica, ■; sibírica var. rothomagénsis, ■

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| | | (25) 66. Theophrásta *Jussiæ'i*, ■; longifòlia, ■

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(55) 136. *Gentiàna* acaúlis, ♃; asclepiàdea, ⚘ 1*s.*; vérna, ♃ 1*s.* 6*d.*; Houstònia cærùlea, ♃ 1*s.* 6*d.*

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| | | (26) 67. Pedàlium mùrex, ○ ……

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| | | (27) 68. Martýnia diándra, ○; proboscídea, ○

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(56) 137. *Polemònium* réptans, ⚘; villòsum, ♃ 1*s.* 6*d.* Phlóx ovàta, ⚘; crassifòlia, ⚘ 1*s.* 6*d.*

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| | (26) 54. Hydròlea spinòsa, ✱; quadrivàlvis, ♃

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(57) 138. *Convólvulus* lineàtus, ⚘ 1*s.* 6*d.* Fàlk*ia* rèpens, ♃ 2*s.* 6*d.*

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(58) 139. Omphalòdes vérna, ♃. Pulmonària virgínica, ✱ 1*s.* 6*d.* *Onósma* taúrica, ♃ 1*s.* 6*d.*

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| | | (28) 69. Córd*ia* *Mýxa*, ♀; *Sebestèna*, ♀

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(59) 140. Hydrophýllum canadénse, ⚘ 1*s.* 6*d.*; virgínicum, ⚘

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(60) 141. Ramónd*a* pyrenàic*a*, ♃ 1*s.* 6*d.*; Scopòlia carniólica, ⚘ 1*s.* 6*d.*

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(62) 145. *Mé*ntha *P*ulègium, ♃; citràta, ⚘

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147. A'juga genevénsis, ♃ 1*s.* 6*d.* *Te*ùcr*ium* *C*hamæ'drys, ⚘. *T*eùcr*ium* orientàle, ⚘

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149 *B*etónica grandiflòra, ⚘. Dracocéphalum altaiénse, ⚘; argunénse, ⚘ 2*s.* 6*d.*

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| | 55. *P*ràsium màjus, ♣; mìnus, ♣

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150. *O'*cymum basílicum, ○; pilòsum, ○

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(63) 151. *V*erbèna hastàta ⚘; strícta, ⚘; bonariénsis, £ 1*s.* 6*d.*; Lambért*i*, £ 1*s.* 6*d.*

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| (27) 56. Myóporum parvifòlium, ☘. Stenochìlus glàber, ☘

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(65) 153. *O*robánche màjor, ⚘; ramòsa, ⚘. Lathræ'a squamària, ⚘ 2*s.* 6*d.*

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(66) 154. Pinguícula vulgàris, ⚘; grandiflòra, ⚘ 2*s.* 6*d.*

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(67) 155. Prímula Aurícula, £. *D*odecàtheon Meád*ia* ⚘. Prímula farinòsa, ⚘ 1*s.* 6*d.*

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(68) 156. Globulària nudicaúlis, £; cordifòlia, £ 1*s.* 6*d.*; vulgàris, £.

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(69) 157. Armèria vulgàris, £. *P*lumbàgo europæ'a ⚘ 1*s.* 6*d.* *S*tátice speciòsa, ⚘ 3*s.* 6*d.*

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(70) 158. *P*lantàgo mèdia var. *r*òsacea, £; asiática, ⚘ 1*s.* 6*d.*; *G*laúx marítima, ⚘ 1*s.* 6*d.*

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(71) 159. Mirábilis *Jálapa*, ✱. Oxýbaphus Cervantès*ii* ✱ 1*s.* 6*d.* Abrònia mellífera, ~

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(72) 160. *A*marânthus caudàtus, ○; hypochondrìacus, ○. Iresìne celosiòìdes, £ 1*s.* 6*d.*

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(74) 162. Chenopòdium Bònus Henrìcu*s*, ⚘ 6*d.* *B*lìtum capitàtum, ○

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| | (28) 57. Begòn*ia* Evans*iàna* ✱ 1*s.* 6*d.*; argyrostígma.

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(75) 163. Oxýria renifórmis, ⚘ 1*s.* 6*d.* *P*olýgonum ocreàtum, ⚘. *R*hèum austràle, ⚘ 2*s.* 6*d.*

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| (27) 41. *L*aúrus nóbilis, ♠. *Sássafras*, Ψ

Order CLIX. *Myrísticeæ.* 331.

| | | (29) 70. Myrística moschàta, ♠. Hernánd*ia* sonòra ♠

Order CLX. *Prote*àceæ. 332.

| | (29) 58. Grevíll*ea r*osmarinifòlia, ♣; *a*canthifòlia, ♣

Order CLXI. *Thymelæ'æ.* 333.

| (28) 42. *D*áphne *C*neòrum, ♣; hýbrida, ♣

Order CLXII. O*syrídeæ.* 334.

| | (30) 59. *O*sýris álba, ♣ ⌋. Exocárpos *c*upressifórmis, ♠

Order CLXIII. Santalàceæ. 335.

| (29) 43. Ný*ssa* villòsa, Ψ; biflòra, Ψ

Order CLXIV. *Elæágneæ.* 336.

| (30) 44. Shephérd*ia* canadénsis, ■ ; argéntea, ■

Order CLXV. *Asárinæ.* 337.

(76) 164. *A'*sarum europæ̀um, ¥ ; canadénse, ⊻ ; virgínicum, ¥ 1*s*.6*d*. *A*ristolòchia Clematìtis, ⊻ 1*s*.

Order CLXVI. *Cytíneæ.* 338.

| | | (30) 71. *N*epénthes distillatòria, ▙ ; Phyllámphora, ▙

Order CLXVII. E*uphorb*iàceæ. Section 1. *Búxeæ.* 339.

(77) 165. Pachysándra procúmbens, ¥ 1*s*. 6*d*. ......

E*uphorb*iàceæ. Section 2. *Phyllántheæ.* 340.

| | 60. Cluy̆t*ia a*laternöìdes, ■ ; pulchélla, ■

E*uphorb*iàceæ. Section 3. C*rotòneæ.* 341.

| 45. Bòry*a l*igústrina, ■ ; acuminàta, ■

E*uphorb*iàceæ. Section 4. A*calýpheæ.* 342.

166. *M*ercuri*àlis* perénnis, ⊻ 6*d*. Tràg*ia* ùrens, ○

E*uphorb*iàceæ. Section 5. H*ippomàneæ.* 343.

| 46. Stillíng*ia l*igustrina, ■. .....

E*uphorb*iàceæ. Section 6. E*uphorb*ièæ. 344.

167. *E*uphórb*ia* virgàta, ⊻ ; *e*pithymöìdes, ⊻ ; *s*alicifòlia, ⊻ 1*s*. 6*d*.

Order CLXVIII. *Stackhoúseæ.* 345.

| | (31) 61. Stackhoús*ia* linariifòlia, ■ ; spathulàta, ■

Order CLXIX. *Antidésmeæ.* 346.

| | | (31) 72. Antidésma alexitèria, ■. Stilàgo *B*ùnias, ♀

Order CLXX. U*rtíceæ.* 347.

(78) 168. Parietària officinàlis, ¥ ; judàica, ¥ 1*s*. 6*d*. *U*rtìca nívea, ⊻.

Order CLXXI. U*lmàceæ.* 348.

| (31) 47. *U'*lmus críspa, ‡. Céltis occidentàlis, ‡

Order CLXXII. P*iperàceæ.* 349.

(79) 169. Saurùrus lùcidus, ⊻ ; cérnuus, ⊻ 2*s*. 6*d*.

Order CLXXIII. *Juglándeæ.* 350.

| (32) 48. *J*úglans règia, ‡ ; nìgra, ‡.

Order CLXXIV. *Amentàceæ.* Suborder 1. S*alíceæ.* 351.

| (33) 49. *S*àlix herbàcea, ▪ ; reticulàta, ▪

***Amentàceæ.* Suborder 2. B*etùlinæ.* 352.**

| 50. *B*étula nàna, ▪ ; *A'*lnus incàna, ▪

***Amentàceæ.* Suborder 3. *Cupulíferæ.* 353.**

| 51. *F*àgus sylvática incìsa, ‡. *Q*uércus coccífera, ‡

***Amentàceæ.* Suborder 4. P*latàneæ.* 354.**

| 52. Liquidámbar styracífluum, ‡ ; imbérbe, ‡

***Amentàceæ.* Suborder 5. M*yríceæ.* 355.**

| 53. *M*yrìca *Gàle* ■ ; Comptòn*ia a*splenifòlia ■

Order CLXXV. H*amamelídeæ.* 356.

| (34) 54. Fothergíll*a a*lnifòlia, ■. *H*amamèlis virgínica, ■

Order CLXXVI. *Coníferæ.* Suborder 1. T*áxinæ.* 357.

| (35) 55. *E'*phedra monostàchya, ■. *T*áxus hibérnica, ■

***Coníferæ.* Suborder 2. *Cupréssinæ.* 358.**

| 56. *J*uníperus *S*abìna, ■ ; prostràta, ■

***Coníferæ.* Suborder 3. A*biétinæ.* 359.**

| 57. *P*ìnus *S*tròbus, ♀ ; Clanbrasili*àna*, ■

Order CLXXVII. *Empétreæ.* 360.

| (36) 58. *E'*mpetrum nìgrum, ▪. Corèma álba, ▪

Class II. MONOCOTYLEDÒNEÆ, OR ENDO′GENÆ.

Plants with a single cotyledon, or more if alternate; veins of leaves parallel to the length of the leaf and to each other, and but little branched.

Order CLXXVIII. *Cycàdeæ.* 361.

| | | (32) 74. Zàmia spiràlis, Cỳcas revolùta,

Order CLXXIX. *Hydrocharideæ.* 362.

(80) 170. Hydrócharis mórsus rànæ, . *Stratiòtes aloòides,* 1*s.* 6*d.*

Order CLXXX. *Alismàceæ.* 363.

(81) 171. Sagittària sagittifòlia, 1*s.* 6*d.* *Alísma ranunculòides,*

Order CLXXXI. *Butòmeæ.* 364.

(82) 172. *B*ùtomus umbellàtus, 1*s.* 6*d.*; latifòlius,

Order CLXXXII. *Juncagineæ.* 365.

(83) 173. Triglòchin palústre, 1*s.* 6*d.*; marítimum,

Order CLXXXIII. *Orchideæ.* Tribe 1. *Neottieæ.* 366.

(84) 174. Listèr*a* ovàta, 1*s.* 6*d.* Goodyèr*a* pubéscens, 3*s.* 6*d.*

Orchideæ. Tribe 2. *Arethùseæ.* 367.

175. *E*pipáctis palústris, ; latifòlia, . Calopògon pulchéllus, 3*s.* 6*d.*

Orchideæ. Tribe 3. *Gastrodieæ.* 368.

| | | 74. *Vanilla* aromática, . Prescòt*ia plantagínea,*

Orchideæ. Tribe 4. *Ophrýdeæ.* 369.

176. *O′*rchis pyramidàlis, 1*s.* 6*d.*; *O*ˆphrys apífera, 1*s.* 6*d.* Platanthèra bifòlia, 1*s.* 6*d.*

Orchideæ. Tribe 5. Vándeæ. 370.

| | | 75. Cymbídium sinénse, . Oncídium flexuòsum,

Orchideæ. Tribe 6. *Epidéndreæ.* 371.

| | | 76. Blèt*ia* verecúnda, ; Tankervíll*æ*, .

Orchideæ. Tribe 7. *Malaxideæ.* 372.

177. Líparis *l*ilifòlia, 3*s.* 6*d.* Calỳpso americàna,

Orchideæ. Tribe 8. *Cypripedieæ.* 373.

178. Cypripèdium Calcèolus, 3*s.* 6*d.*; spectábile, 3*s.* 6*d.*

Order CLXXXIV. *Scitamineæ.* 374.

| | | (33) 78. Kæmpfèr*ia Galánga,* . Alpín*ia* calcaràta,

Order CLXXXV. *Cánneæ.* 375.

(85.) 179. *C*ánna pàtens, 2*s.* 6*d.*; speciòsa,

Order CLXXXVI. *Musàceæ.* 376.

| | | (34) 79. Strelítz*ia* regìnæ, ; ovàta,

Order CLXXXVII. Ir*ideæ.* 377.

(86) 180. *I′*ris pùmila, ; spùria, 1*s.* 6*d.*; vérna, 3*s.* 6*d.* Reneálm*ia* grandiflòra, 1*s.* 6*d.*

Order CLXXXVIII. *Hæmodoràceæ.* 378.

(87) 181. Lophìola aúrea, 2*s.* 6*d.* *Gyrothèca tinctòria *Lindl.* 2*s.* 6*d.*

Order CLXXXIX. *Hypoxideæ.* 379.

(88) 182. Hypóxis *j*úncea, ; erécta,

Order CXC. *Amaryllí*deæ. 380.

(89) 183. Galánthus nivàlis, . Sternbérg*ia* lùtea, Zephyránthes *Atamásco,* 1*s.* 6*d.*

Order CXCI. H*emerocallideæ.* 381.

(90) 184. Fúnk*ia* ovàta, 1*s.*; subcordàta, . Trítoma Uvària, 1*s.* 6*d.*; mèdia,

Order CXCII. *Dioscorieæ.* 382.

(91) 185. Dioscòr*ea* villòsa, ; quaternàta,

Order CXCIII. Tà*meæ.* 383.

(92) 186. *T*àmus commùnis, ; crética,

Order CXCIV. S*milàceæ.* 384.

(93) 187. Convallària majàlis, . Smilacìna boreàlis, 1*s.* 6*d.* Pàris quadrifòlia, 1*s.* 6*d.*

Order CXCV. *Asphodèleæ.* 385.

(94) 188. Czáck*ia* Liliástrum, ⩡ 1*s.* 6*d.* Scilla sibírica, ☿ 1*s.* 6*d.*

Order CXCVI. Tulipàceæ. 386.

(95) 189. Fritillària melèagris, ☿. Erythrònium americànum, ☿ 1*s.* 6*d.*

Order CXCVII. *Melanthàceæ.* 387.

(96) 190. Bulbocòdium vérnum, ☿. *C*ólchicum autumnàle, ☿ ; byzantìnum, ☿ 1*s.* 6*d.*

Order CXCVIII. *Bromeli*àceæ. 388.

| | | (35) 79 Pitcaírn*ia* staminea, ₤. Bilbérg*ia* amœ`na, ₤

Order CXCIX. *Pontedèreæ.* 389.

(97) 191. Pontedèr*ia* cordàta, ≛ 3*s.* 6*d.* ; angustifòlia, ≛

Order CC. *Commelineæ.* 390.

(98) 192. Tradescánt*ia* virgínica, ⩡ 1*s.* Commelìn*a* cœléstis, ✲ 1*s.*

Order CCI. P*álmæ.*' 391.

| | (32) 62. *C*hamæ`rops hùmilis, ⚲ *P*hœ`nix dactylífera, ⚲

Order CCII. Pandàneæ. 392.

| | | (36) 80. *Pandànus* odoratíssimus, ⚲ ; hùmilis, ⚲

Order CCIII. T*ýphinæ.* 393.

(99) 193. *S*pargànium símplex, ≛ 1*s.* ; nàtans, ≛

Order CCIV. *Aròideæ.* Section 1. O*rontiàceæ.* 394.

(100) 194. Symplocárpus fœ'tidus, ⩡ ⌋ 2*s.* 6*d.* *A'*corus gramíneus, ₤. Ròhde*a* japónica, ₤ 1*s.* 6*d.*

Aròideæ. Section 2. A*roideæ vèræ.* 395.

195. *A*`rum itálicum, ✲ ; triphýllum var. zebrìnum, ✲. *C*álla palústris, ≛ 1*s.* 6*d.*

Aròideæ. Section 3. Taccàceæ 396.

| | | 81. *Tácca* pinnatífida, ☿ ; áspera, ☿

Order CCV. *Fluviàles.* 397.

(101) 196. *L*émna polyrhìza, ≛ ; gíbba, ≛. *P*otamogèton nàtans, ≛ 6*d.*

Order CCVI. *Júnceæ.* 398.

(102) 197. Lùzula (Lucìola *Smith*) campéstris, ₤. Narthècium ossífragum, ₤ 1*s.* 6*d.*

Order CCVII. *Gillies*ièæ. 399.

| | (33) 63. Gilliè*sia* gramínea, ⩡ ⌋ 2*s.* 6*d.* . . . .

Order CCVIII. *Restiàceæ.* 400.

(103) 198. Xýris brevifòlia, ₤ △ ; americàna, ₤ △.

Order CCIX. C*yperàceæ.* 401.

(104) 199. *C*àrex præ`cox, ₤ ; Fraser*iàna*, ₤ 1*s.* 6*d.*

Order CCX. *Gramineæ.* *Spicàtæ terminàles.* Section 1. *Ophiùrinæ.* 402.

(105) 200. Ophiùrus incurvàtus, ⫛ ○ ; filifórmis, ⫛ ○

G*ramineæ.* *Spicàtæ terminàles.* Section 2. L*oliàceæ.* 403.

201. *L*òlium perénne, ⫛ ; speciòsum, ⫛

Gramineæ. *Spicàtæ terminàles.* Section 3. N*árdinæ.* 404.

202. *N*árdus stricta, ⫛. . . . . .

G*ramineæ.* *Spicàtæ terminàles.* Section 4. C*énchrinæ.* 405.

203. *C*ènchrus *t*ribulöìdes, ⫛ ○ ; spínifex, ⫛

G*ramineæ.* *Spicàtæ terminàles.* Section 5. L*appagineæ.* 406.

204. *L*appàgo racemòsa, ⫛ ○. . . . .

G*ramineæ.* *Spicàtæ terminàles.* Section 6. *Ægilópinæ.* 407.

205. *Æ'*gilops squarròsa, ⫛ ; hýstrix, ⫛

G*ramineæ.* *Spicàtæ terminàles.* Section 7. H*ordeàceæ.* 408.

206. *H*órdeum praténse, ⫛. *E'*lymus europæ`us, ⫛ 1*s.* 6*d.*

G*ramineæ.* *Spicàtæ terminàles.* Section 8. T*riticeæ.* 409.

207. Brachypòdium pinnàtum, ⫛. Agropýrum cristàtum, ⫛

Gramineæ. Spicàtæ subterminàles. Section 1. *Spartinàceæ.* 410.
208. Spartìna stricta, ψ; cynosuröìdes, ψ

Gramineæ. Spicàtæ subterminàles. Section 2. Pa*spálinæ.* 411.
209. *Páspalum* setàceum, ψ ○; virgàtum, ψ ○

Gramineæ. Spicàtæ subterminàles. Section 3. *Cynodónteæ.* 412.
210. Cŷnodon Dáctylon, ψ ⁎; præ̀cox, ψ ○.

Gramineæ. Spicàtæ subterminàles. Section 4. *Chlorideæ.* 413.
211. Chlòris inflàta, ψ. Beckmánn*ia* erucæfórmis, ψ ○

Gramineæ. Paniculàtæ uniflòræ. Division 1. *Phalarideæ.* 414.
212. Dégraphis arundinàcea var. variegàta, ψ. *Æ*lopecùrus alpìnus, ψ

Gramineæ. Paniculàtæ uniflòræ. Division 2. A*grostideæ.* 415.
213. *A*gróstis vulgàris var. variegàta, ψ. Polypògon littoràlis, ψ :

Gramineæ. Paniculàtæ uniflòræ. Division 3. M*iliàceæ.* 416.
214. *M*ilium effùsum, ψ. Piptathèrum paradóxum, ψ

Gramineæ. Paniculàtæ uniflòræ. Division. 4. *Stipàceæ.* 417.
215. Stìpa pennàta, ψ; capillàta, ψ

Gramineæ. Paniculàtæ uniflòræ. Division 5. A*rundinàceæ.* 418.
216. *C*alamagróstis epigèios, ψ; speciòsa, ψ

Gramineæ. Paniculàtæ uniflòræ. Division 6. C*hætùrinæ.* 419.
217. *C*hætùrus fasciculàtus, ψ ○......

Gramineæ. Paniculàtæ uniflòræ. Division 7. *Asperéllinæ.* 420.
218. Leers*ia oryz*öìdes, ψ; virgínica, ψ

Gramineæ. Paniculàtæ uniflòræ. Division 8. *Hexándræ.* 421.
219. *Or*ŷza satìva, ψ ┘

Gramineæ. Paniculàtæ multiflòræ. Suborder 1. A*venàceæ.* 422.
220. *A*vèna flavéscens, ψ. Triòdia decúmbens, ψ

Gramineæ. Paniculàtæ multiflòræ. Suborder 2. *Festucàceæ.* 423.
221. *Festùca* ovìna, ψ. *U*nìola latifòlia, ψ

Gramineæ. Paniculàtæ multiflòræ. Suborder 3. *Glycérinæ.* 424.
222. *P*òa ánnua, ψ ○. *B*rìza mèdia, ψ

Gramineæ. Paniculàtæ multiflòræ. Suborder 4. *Echinariàceæ.* 425.
223. Echinària capitàta, ψ ○......

Gramineæ. Paniculàtæ multiflòræ. Suborder 5. *Cynosuröìdeæ.* 426.
224. Cynosùrus cristàtus, ψ. Seslèr*ia* cærùlea, ψ

Gramineæ. Subbiflòræ. Suborder 1. Pa*niceæ.* 427.
225. Setària itálica, ψ ○. *P*ánicum clandestìnum, ψ △

Gramineæ. Subbiflòræ. Suborder 2. *Tristéginæ.* 428.
226. Trístegis glutinòsa, ψ .....

Gramineæ. Subbiflòræ. Suborder 3. *Anthoxánthinæ.* 429.
227. Anthoxánthum odoràtum, ψ; amàrum, ψ

Gramineæ. Subbiflòræ. Suborder 4. *Ehrhártinæ.* 430.
| | 64. Ehrhárt*ia* panícea, ψ; gigantèa, ψ

Gramineæ. Subbiflòra. Suborder 5. *Actinòdeæ.* 431.
228. Atheropògon apludöìdes, ψ. Actinóchloa procúmbens, ψ ○
Gramineæ. Villiflòræ. 432.
229. Lagùrus ovàtus, ψ ○. Ripídium stríctum, ψ

Gramineæ. Bracteiflòræ. 433.
230. *Bambùsa* arundinàcea, ψ. (Vol. VI. p. 506.)

Gramineæ. Declìnæ. 434.
231. Trípsacum *d*actylöìdes, ψ. Zèa *Mày*s, ψ ○

Gramineæ. Anómalæ. 435.
232. *Lŷg*eum *Sp*ártum, ψ 1*s*. 6*d*.

Second Grand Division, CELLULA`RES.

Plants which, when anatomised, are found to be devoid of spiral vessels, and to be composed chiefly of cellular tissue.

Class I. FOLIA`CEÆ.

Order 1. *Fílices*. Tribe 1. *Polypodiàceæ*. 436.

(106) 233. *P*olypòdium vulgàre, ♃. *Céterach* officinàrum, ₤ 1*s*. 6*d*. *O*noclèa sensíbilis, ♃ 2*s*. 6*d*.

***Fílices*. Tribe 2. *Osmundàceæ*. 437.**

234. Osmúnd*a* regàlis, ♃ 1*s*. 6*d*.; *c*innamòmea, ♃

***Fílices*. Tribe 3. *Gleichen*ìeæ. 438.**

235. Anèmia hùmilis, ♃. Schizæ`a pusílla, ♃

***Fílices*. Tribe 4. *Ophioglósseæ*. 439.**

236. Ophioglóssum vulgàtum, ♃ 1*s*. Botrýchium virgínicum, ♃; Lunària, ♃ 1*s*. 6*d*.

***Fílices*. Tribe 5. *Marrati*àceæ. 440.**

| | | 82 Maráttia alàta, ₤. Danæ`*a* alàta, ₤

Order II. *Equisetàceæ*. 441.

(107) 237. *E*quisètum filifórme, ₤; hyemàle, ₤; variegàtum, ₤ 1*s*. 6*d*.

Order III. *Lycopodíneæ*. 442.

(108) 238. Lycopòdium *S*elàgo, ♀~; denticulàtum, ♀ 1*s*.

Order IV. *Marsile*àceæ. 443.

(109) 239. Pilulària globulífera, ♀~ Isoètes lacústris, ≛ 1*s*. 6*d*.

Order V. *Músci*. Tribe 1. *A'stomi*. 444.

(110) 240. *P*háscum subulàtum, Bexley; stoloníferum, Walthamstow.

***Músci*. Tribe 2. *Gymnóstomi*. 445.**

241. Gymnóstomum truncátulum; pyrifórme, Hampstead Heath.

***Músci*. Tribe 3. *Aploperístomi*. 446.**

242. Tórtula muràlis. *P*olýtrichum commùne, Blackheath. Dícranum glaúcum, 1*s*.; scopàrium.

***Músci*. Tribe 4. *Diploperístomi*. 447.**

243. Funària hygrométrica, Wandsworth Common. *H*ýpnum seríceum, about London.

***Músci*. Tribe 4. *Schistocárpi*. 448.**

(111) 244. Andreæ`*a* rupéstris; nivàlis.

Order VI. *Hepáticæ*. 449.

245. Marchánt*ia* polymórpha. Jungermánn*ia* pínguis, Hampstead Heath.

Class II. APHY'LLÆ.

Order VII. *A'lgæ*. Tribe 1. *Diatòmeæ*. 450.

(112) 246. Diátoma flocculósum, Pool on Hampstead Heath. Desmídium cylíndricum.

***A'lgæ*. Tribe 2. Nostóchinæ. 451.**

247. Palmélla cruénta. *Nóstoc* commùne. Chætóphora *e*ndiviæfòlia var. crássa, Finchley.

***A'lgæ*. Tribe 3. *Confervöídeæ*. 452.**

248. Zygnèma nítidum, Battersea. *C*onférva frácta, about London. *C*hàra vulgàris, Battersea.

***A'lgæ*. Tribe 4. *Ulvàceæ*. 453.**

249. *U*'lva bullòsa. Vauchèr*ia* radicàta, Camberwell, in ponds dried up in summer.

***A'lgæ*. Tribe 5. *Florídeæ*. 454.**

250. Ptilòta plumòsa. Sphærocóccus críspus. Rhodómela subfúsca.

***A'lgæ*. Tribe 6. *Fucöídeæ*. 455.**

251. *F*ùcus vesiculòsus. Laminària saccharìna; esculénta.

Order VIII. *Lichènes*. Tribe 1. *Idiothálami*. 456.

(113) 252. Lecídea *q*uérnea, Epping Forest. Calícium sphærocéphalum, Epping Forest.

***Lichènes*. Tribe 2. *Cœnothálami*. 457.**

253. Peltídia canìna, Blackheath. Cenómyce pyxidàta, Hampstead Heath.

Lichènes. Tribe 3. *Homothálami.* 458.

254. *U'snea* barbàta. Collèma granulàtum.

Lichènes. Tribe 4. *Athálami.* 459.

255. Leprària flàva, near London; viréscens, near London.

Lichènes. Tribe 5. *Pseùdo-Lichènes.* 460.

256. Opégrapha vulgàta. Arthònia impolìta.

Order IX. *Fúngi.* Tribe 1. *Hymenomycètes.* 461.

(125) 257. *Agáricus* campéstris; praténsis. *Morchélla* esculénta, Carshalton.

Fúngi. Tribe 2. *Pyrenomycètes.* 462.

258. Sphæ'ria digitàta; hypóxylon, Lambeth.

Fúngi. Tribe 3. *Gasteromycètes.* 463.

259. Phállus fœ'tidus, Hampstead Heath. Nidulària campanulàta. *T*ùber cibàrium.

Fúngi. Tribe 4. *Coniomycètes.* 464.

260. Bótrytis parasítica. Æcídium *Berbéridis.* *U*rèdo *F*àbæ.

Totals: △ ⦶ ○ (114) 260; ⚘ ◓ (36) 58; ⊔ ⌋ (33) 64; ▭ (36) 82: = (219) 464.

The first observation of a gardener, on looking over the foregoing table, will probably be, where am I to procure all these plants? But let not this difficulty deter any gardener under forty. If it does, he is unfit for what he will have to meet with before he shall have passed through the remainder of his life. There are three sources in Britain from which every plant in the foregoing table may be procured; the nurseries, the botanic gardens, and the fields. All the plants in the first column, with the exception of the mosses, lichens, algæ, and fungi, amounting only to twenty species, may be procured from the Epsom nursery. The twenty species of mosses, &c., may be gathered in the fields by any cryptogamist. We recommend application to be made to the curators of botanic gardens, who may direct some of their young men where to pick them up. These habitats, and other particulars to guide the young men, are partly given in the table, and will be found complete in the *Encyclopædia of Plants*. Most, or all, of the trees and shrubs in the second column may be procured from Messrs. Loddiges; as may most of the green-house plants in the third column, and the hot-house plants in the fourth column: but whatever is deficient in any of the nurseries in the articles of green-house and hot-house plants, we believe, may be made up from the Kew botanic garden. After the nurseries have been exhausted, therefore, we recommend a direct application to Mr. Aiton at Kew. The botanic garden there being supported at the public expense, the public have a right to benefit from it, so long as this can be done without any injury to the establishment; and, as taking cuttings from plants will in most cases rather benefit than injure them, we are at a loss to know on what ground they can be refused to any person who can show that he is competent to make a proper use of them.

Through the kindness of the London nurserymen, and especially of Messrs. Loddiges, Mr. Low of the Clapton nursery, Messrs. Young of Epsom, and Mr. Donald of Woking, we expect, in the course of the present spring, to possess specimens illustrating all the orders and tribes of the first and second columns; and for the third and fourth columns we intend to apply at Kew for cuttings, as soon as this Magazine is published. We shall not limit our application to the particular plants enumerated in these two columns, but ask for "cuttings of any species illustrative of the orders and tribes there enumerated." Other gardeners may do the same; and as the orders are numbered, the trouble taken or given will be very little. The result of our application we shall lay before our readers in our next Number.

PART II.

REVIEWS.

ART. I. *Transactions of the Horticultural Society of London.* Vol. VII. Part IV.

(*Continued from* p. 54.)

57. *Upon the Application of Hot Water in heating Hot-houses.* By Mr. Thomas Tredgold. Read August 5. 1828.

THIS is by far the most valuable paper which has ever been published on the subject of hot water, and we shall therefore give it nearly entire, with most of its tables, and with copies of its engravings. We shall only make one remark; and that is, on the expression which Mr. Tredgold uses, of Mr. W. Atkinson being "its discoverer." Mr. Tredgold wrote a paper to the same effect, dated January, 1827, which appeared in the *Gardener's Magazine.* (Vol. III. p. 427.) All that we have to state is, that, notwithstanding Mr. Atkinson's discovery, which we do not in the slightest degree doubt, since it is no uncommon thing for two persons to discover the same thing, it is an undeniable fact that the first discoverer was Bonnemain; and that Chabannes heated both dwelling-houses and hot-houses by hot water in London and its neighbourhood in 1816, some years before Mr. Atkinson's discovery, which was in 1822. The proofs will be found in the third and fourth volumes of the *Gardener's Magazine.* We are not surprised that Mr. Atkinson should not have heard of what Chabannes had done; for we have learned, from what we consider undoubted authority, that when, in January last, some of the Bank of England directors proposed to heat a part of their establishment by hot water, their architect, eminent though he is, had not heard of such a mode of heating.

The fact is, that, in this progressive age, a man who has the means of existence to procure by his labour or his talent ought to be learning every day of his life. If he stands still for a moment, the world will march on without him. Before we proceed to Mr. Tredgold's valuable paper, we must be allowed to express our great satisfaction at the removal of the tax on coals. There will be now much less temptation to employ stable-dung as a source of heat in gardening, a process by which its qualities as a manure are deteriorated, never less than 50, and we should think, on an average of gardens, 90 per cent. Every Number of this Magazine, for more than a year past, has proved that all descriptions of forcing, from the cucumber-bed to the pine-stove, including the hot wall, and the hot border, may be as well performed by hot water as by dung; and better, except in extraordinary cases, than either by smoke-flues, hot air, or steam.

" A new method of applying heat to the purposes of forcing and preserving plants in houses having been discovered, which possesses some important advantages compared with the best method before in use; and the first instance of its successful application under the direction of Mr. W. Atkinson, its discoverer, having been published in the *Transactions of the Horticultural Society* (vol. vii. p. 203.), it appeared to me that the principles of the method would form an interesting enquiry, which might not be altogether unworthy of your attention.

" 1. The power of imitating other climes and other seasons than those which nature affords us, is known and valued as it ought to be; yet it remains difficult even to imagine the extent to which this power may be applied: in this age it produces luxuries of which few can enjoy more than the commonest species; but in the next — nay, even in our own, there is a reasonable expectation of a considerable addition to the quantity and quality of those artificial productions, as well as to the vast sources of pleasure and information they afford to the admirers and the students of nature.

" 2. The vehicle employed to convey and distribute heat in the new process is water; for it has been found that, in an arrangement of vessels connected by pipes, the whole of the water these vessels and pipes contain may be heated by applying heat to one of the vessels; and that in this manner a great extent of heating surface, and a large body of hot water to supply it, may be distributed so as to maintain an elevated and regular temperature in a house for plants, or indeed in any other place requiring heat.

" 3. The obvious advantages of this method are, first, the mild and equal temperature it produces; for the hot surface cannot be hotter than boiling water; secondly, the power of heating such a body of water as will preserve the temperature of the house many hours without attention; and, thirdly, the freedom from smoke or other effluvia of smoke-flues. In houses for plants these advantages are most important; and my object is to investigate the principles called into action to produce them, to the end that we may be able to regulate their operation in the various particular cases arising in practice.

" 4. In order to develope the principles on which a hot-water apparatus acts, we may select the simple case of two vessels placed on a horizontal plane, with two pipes to connect them; the vessels being open at the top, and the one pipe connecting the lower parts of the vessels, and the other their upper parts.

" If the vessels and pipes be filled with water (*fig.* 21.), and heat be applied to the vessel A, the effect of heat will expand the water in the vessel A; and its surface will, in consequence, rise to a higher level (*a a*), the former general level surface being *b b*. The density of the fluid in the vessel

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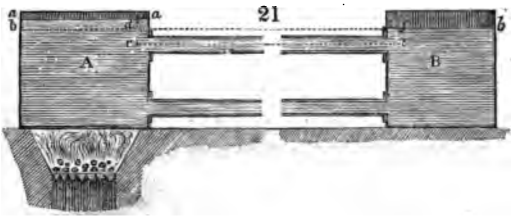

A will also decrease in consequence of its expansion; but as soon as the column (*c d*) of fluid above the *centre of the upper pipe* is of a greater weight than the column *f e* above that centre, motion will commence along the upper pipe from A to B, and the change this motion produces in the equilibrium of the fluid will cause a corresponding motion in the lower pipe from B to A; and, in short pipes, the motion will obviously continue till the temperature be nearly the same in both vessels; or if the water be made to boil in A, it may also be boiling hot in B, because ebullition in A will assist the motion.

"5. The causes which tend to retard the motion of water in the pipes are, first, the contraction of the moving fluid at the orifice of the pipes; secondly, the friction of the fluid in the pipes, which sets the limit to the distance to which the pipes can be extended to produce the proper quantity of useful effect: but it is remarkable, that the higher the temperature of the moving fluid the less its friction; thirdly, the motion is retarded by the cooling of the fluid in its progress along the pipes, such cooling having a tendency to produce a double current; and, fourthly, by bends and changes of form.

"6. It will be evident to any person of philosophical research, however, that in considering water the only liquid capable of being employed, we should be losing sight of one of the greatest advantages resulting from the knowledge of natural phenomena; for all liquids expand by heat, and hence in all of them its partial application would produce motion under proper circumstances; while the boiling points of different liquids are at such different temperatures that we may vary the ultimate temperature of the heating surface from 100° to 600°, that of water being 212°. This mode of considering the subject opens a new source for speculation and for improvement, which it will be desirable to consider more in detail after analysing the laws of the motion of liquids by heat.

"7. A general investigation, embracing all the circumstances concerned in the motion, would be extremely intricate, and hence I shall not attempt to include more than those which are of sufficient importance to have an influence on the results requiring attention in practice; and, for a like reason, I adopt the most simple formula of hydraulics that applies to the case:—

Put l=the sum of the lengths of the pipes in feet.
h=the depth of the liquid in the boiler in feet below the centre of the upper pipe.
e=the expansion due to the mean difference of temperature at the extremes of the apparatus.
f=the friction of the liquid against the surface at the mean temperature for 1 ft. in length and 1 in. in diameter.
d=the diameter of the pipe in inches; and
v=the velocity in feet per second.

"The friction of a pipe is as its surface, and the square of the velocity directly, and the equivalent head is inversely as the area of the section of the pipe; consequently,

$$\frac{3{\cdot}1416\,d\,l\,f\,v^2}{{\cdot}7854\,d^2} = \frac{4\,l\,f\,v^2}{d} = \text{the head equivalent to the friction.}$$

But, in a pipe near the top, the head producing the velocity and overcoming the friction is the quantity the fluid rises by expansion, or $h\,e$; therefore,

$$\text{A}\left(h\,e - \frac{4\,l\,f\,v^2}{d}\right) = v^2;\ \text{whence}\ \sqrt{\frac{\text{A}\,h\,e\,d}{d + 4\,\text{A}\,l\,f}} = v.$$

The effect of the cohesion of the fluid does not produce a sensible effect in practical cases; but, if it had been considered, the result would have shown that the pipe might be so small in proportion to its length as to render the velocity nothing.

"8. The coefficients to be obtained from experiment are denoted by A, e, and f. That denoted by A depends only on the form of the tube or pipe at its junction to the boiler, being the same for all fluids.

"For the common mode of joining (*fig.* 22.) it is A=42; but, for a pipe with a conical entrance (*fig.* 23.), it is A=62. Now, the expense of the conical form renders it probable that it will seldom be used; hence, 42 may be inserted in any rule for general purposes.

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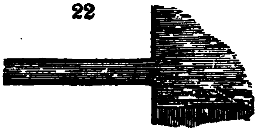

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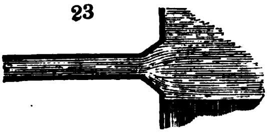


"9. The expansion of liquids not being perfectly equable by equal increments of temperature, and not the same for all liquids, the easiest mode for obtaining it for any particular case will be by means of a table.

Table of Expansion of Liquids.

Expansion by 1° of heat at the temperature in the first column.

Temperature.	Water.	Water saturated with common Salt.	Spirit of Wine.	Olive Oil.
°				
62	·00009	·00010	·00059	·0007
72	·00014	·00015	·00061	
82	·00017	·00018	·00063	
102	·00025	·00027	·00068	
122	·00029	·00031	·00075	
162	·00034	·00037	·00081	
182	·00036	·00039		
212	.00038	·00041		

If the difference of temperature, for example, be 8°, and the mean temperature 172°, then, for water, 8 × ·00035=·0028 is the expansion of water by 8° of heat, and 8 × ·00038=·00304 is the expansion for a saturated solution of salt.

"10. The friction of fluids, and particularly the effect of change of temperature, has been investigated only in a very partial manner. [Here Mr.

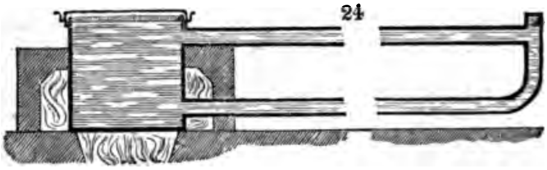
Tredgold has formed a table from Dubuat's *Principes d'Hydraulique*, which we do not think it necessary to copy.]

" 12. From the common principles of hydrostatics, and the equations we have obtained, the following practical deductions may be derived: —

" 1st, The more expansible the liquid is, by a given change of temperature, the greater will be the velocity.

" 2d, All other things being the same, the velocity will be increased in proportion to the square root of the depth of the boiler; therefore, in a boiler four times as deep, the velocity will be doubled.

" 3d, If there be sufficient service of pipe for the object required, a reservoir is not necessary to the motion of the water; a simple bent pipe (*fig.* 24.) being all that is essential to motion; the reservoir is only to reserve a hot mass of water to maintain the heat after the fire has gone out,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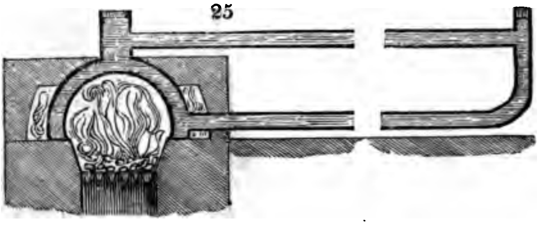
" 4th, If a boiler have sufficient surface to receive the effect of the fire, and the whole apparatus contains as much water as will convey the heat from the fire to the heating surface in the time corresponding to its velocity, its capacity need not be further increased, except as a reservoir of heat, to act when the fire ceases to burn. (*fig.* 25.)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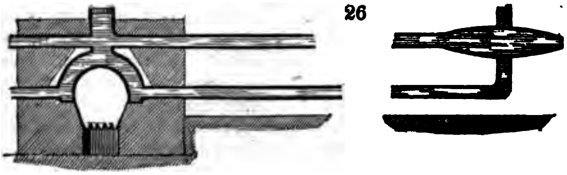
" 5th, Where heat is required only during the action of the fire, a large surface in proportion to its capacity may be used with advantage, to give off heat over the descending pipe (*figs.* 26. and 27.): cooling in this manner will increase the velocity.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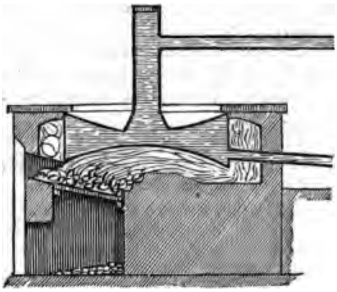
" 6th, The aperture of the upper pipe should not be more than about 1 in. below the surface of the water, or as much as prevents its drawing air, in an open boiler; but the lower it is below that, the less effect will be



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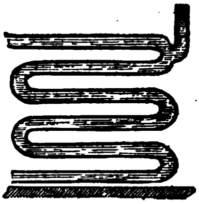

obtained: the lower pipe should enter the boiler where it has least tendency to cool and check the fluid rising to the upper pipe from the fire surface.

7th, In a close boiler a pipe may, at any distance from the boiler, rise to any height and descend again; but it must neither rise twice, nor dip, after leaving the boiler; where it is necessary to raise it, there should be an open pipe inserted at each extremity, of the height of the rise: advantage has been taken of this circumstance to avoid doorways. (*fig.* 28.)

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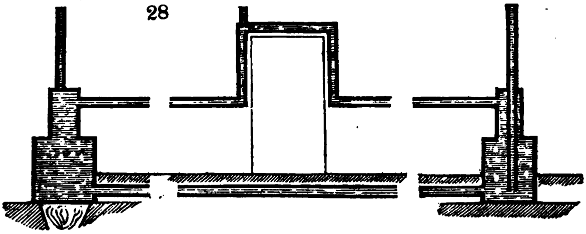

"8th, A certain quantity of motion would be obtained by a single horizontal pipe between any points except the bottoms of the vessels; but, the nearer to the surface, the more motion will be obtained; and, with one pipe, there must be a double current in it.

"9th, The retarding effect of friction is directly as the length, and inversely as the diameter, of the pipes; it is also increased by every bend and angle in the pipes.

"13. Having considered the circumstances necessary to the motion of the fluid in pipes, the next enquiry must be the quantity of heat a liquid can convey in a given time; and the quantity of surface required to communicate it to the air of the house. It is a fact not so generally known as it ought to be, that if we communicate a certain quantity of heat to a liquid, it will give out exactly the same quantity again in cooling to its former temperature; less nor more it cannot afford. It is equally true that, with the same temperatures, equal and like surfaces give off equal quantities of heat to air, &c.; and, consequently, the quantities of heat exchanged under given circumstances are measurable quantities, and this subtile element is brought within the domain of science.

"14. I have shown how to estimate the quantity of heat required for a forcing-house, in my book on warming and ventilating (art. 70. and 71.), and have since had to assign the proportions for houses of the largest size, and the most different from the ordinary forms of any in this country;

which, having stood the test of experience, and being far beyond the bounds of common practice, afford a proof of the benefit of studying first principles in new and untried cases; but, in general, for hot-houses, twice the number of feet contained in the area of the surface of glass will be equal to the number of cubic feet of air which that surface should heat per minute when in full action.

" 15. Now the heat given off by the surfaces of the apparatus depends on the kind of materials they consist of, and their temperatures. The following table shows the boiling point and temperature of the heating surface for different liquids when confined by iron or glass; also their specific heat, or that quantity of heat they can convey, when that conveyed by an equal volume of water is unity.

Kind of Liquid.	Specific Heat.	Boiling Point.	Greatest Temperature of Surface.	Average Temperature.
		°	°	°
Water - - -	1	212	190	180
Sea Water - -	- -	214	192	182
Brine - - -	- -	226	205	192
Water 48, Alum 52	- -	220	200	188
—— 55, Sulphate of lime 45 - -	- -	220	200	188
Petroleum - -	·415	316	285	245
Linseed Oil - -	·496	600	540	510
Sulphuric Acid - -	·35	605	544	514

" 16. If the cubic feet of air to be heated per minute be multiplied by the number of degrees it is to be warmed, and the result be divided by twice the difference between the temperature of the house and that of the surface of the pipes, the result will be the feet of surface of iron pipe, &c., required. Thus, if 1000 cubic feet per minute are to be warmed, and the extreme case is supposed to be, that when the external air is 20° the house should be 50°; and, therefore, the air is to be warmed 30°; and with water the surface will be 190° when the water boils [*], but only 180° in the average state; therefore,

$$\frac{1000 \times 30}{2(180 - 50)} = \frac{30000}{260} = 116 \text{ feet of surface.}$$

If we employ brine for the same case;

$$\text{then, } \frac{1000 \times 30}{2(192 - 50)} = 106 \text{ feet.}$$

And, with oil,

$$\frac{1000 \times 30}{2(510 - 50)} = 32\tfrac{1}{2} \text{ ft. would answer the purpose.}$$

When bright tinned iron, earthenware, &c., are employed for pipes, much more surface is necessary.

" The advantage of using a fluid which bears a high temperature without boiling is therefore considerable in reducing the quantity of surface required to produce a given effect; oil requiring only one third of the surface necessary for water; but oil is very inflammable, and sulphuric acid corrosive.

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[*] The mean and extreme temperatures for the neighbourhood of London may be obtained from the observations of Mr. Daniell, in his Meteorological Essays.

"17. It is known from experience that the heat which raises the temperature of 1 cubic foot of water 1°, will heat 2850 cubic feet of air 1°; consequently, if A be the quantity of air to be heated per minute to t degrees, and x be the difference of the temperature of water in the apparatus, then

$\frac{A\,t}{2850} = wx$; or, $\frac{A\,t}{2850\,x} = w =$ the quantity of water in cubic feet that must flow along the pipe per minute to supply the heat; and the quantity being equal to the velocity per minute multiplied by the area of the pipe; the means of knowing whether the pipes be capable of allowing the proper quantity to flow along, or not, becomes easy; as well as of fixing the proper diameter. If any other liquor be used, the number 2850 should be multiplied by the specific heat of that liquid; and then proceed as before.

"18. The least quantity of liquid the apparatus could contain is double the quantity cooled during the time of making one circuit in the pipes, which is found by dividing the quantity w, as found above, by the number of circuits or parts of a circuit made in a minute, and comparing the velocity with the length of the pipes. Whatever the quantity is in excess above this, is to be considered a reserve of hot fluid to afford heat after the fire is out; and the fire must be so much earlier lighted as to heat this excess of water, as it must be hot before the surface can afford its effective supply of heat. Hence, there is a considerable objection among gardeners to large boilers and large reservoirs.

"19. But the most important of the properties of the hot-water method, as first tried, consists in the power it has of keeping up the temperature of the house, for a long period, without attention from the attendant; and it is entirely owing to the excess of fluid that it has this advantage over steam heat; and the exact knowledge which we now have of the heat which water contains in proportion to its temperature, enables us to calculate the time the cooling of the fluid will maintain the heat of a house; for if u be the number of degrees the water is above the temperature of the house, and w its quantity in cubic feet; then, since $\frac{A\,t}{2850}$ is the quantity to supply the house one minute, $\frac{2850\,w\,u}{A\,t} =$ the minutes the temperature of the house will be sustained by the cooling of the water longer than in a house heated by steam alone. It will be obvious, the actual time of cooling will be more than twice this time, and the heat afforded to the house will decrease; but this is in some measure compensated for by the solid parts of the house receiving an excess while the apparatus is in full action, or boiling, and which it affords again as the house cools; a compensation taking place in this manner, which renders it easy enough to proportion the quantity of reservoir with as much certainty as is necessary.

"20. The ordinary method of making reservoirs and boilers so large as to answer the purpose of maintaining the heat during the night, has the objection already noticed of rendering it a considerable time before the apparatus can be raised to a temperature capable of giving much heat; and it appears to me that it would be a material improvement to heat the water for a reserve of heat, by passing the pipes of the apparatus through the water so that its temperature should be slowly raised, and the house receive heat during the time. A small proportion of surface of pipe will heat the water, because water abstracts heat from a heating surface with about twenty times the rapidity that air does at the same temperatures;

hence, by putting a twentieth part, in addition to the surface required for the house, through a proper reservoir of water, it will be slowly raised to nearly the same temperature as the water in the pipes, and return its heat to the house as soon as the fire ceases to keep up an excess of heat in the pipes. *Fig.* 29. shows such an arrangement, where *c* is the cistern with part of the pipe passing through it.

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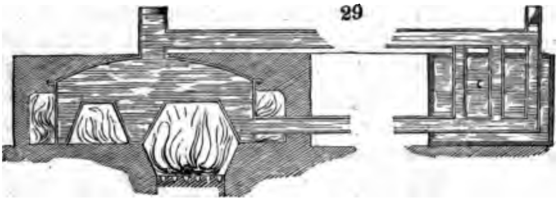


"21. There is very little strain on the boilers of hot-water apparatus, except in cases where there is much difference of level; and as these rarely occur, consequently they may be constructed in the best mode for applying heat; which is most effectively done by having as much bottom surface as possible with a boiler of a given capacity. For burning a bushel of coals per hour, the area of the fire-grate should not be less than 8 nor greater than 16 square feet; and the bottom surface four times the area of the grate, with 32 ft. of side flue; and a considerable advantage results from adopting the larger proportion for the grate and bottom surface, on account of the fire requiring less attention.

"22. The forms of boilers may be varied in a considerable degree, provided the above quantity of surface receives the effect of the fire. A boiler in the form of half a hollow cylinder, affording a great quantity of fire and flue surface, is made by Messrs. Bailey (*fig.* 25.), and a bottle-shaped boiler (*fig.* 26.) is made by Messrs. Cottam and Hallen, which has a considerable quantity of fire and flue surface, compared with its capacity; both these are, therefore, well adapted to cases where only a small reserve of heat is required for night. The variation of the Scotch distiller's boiler (*fig.* 27.) is also a good form for maintaining the supply of heat to the house, while a separate reservoir is warmed by part of the pipes. Another mode (*fig.* 28.) of obtaining a large portion of fire and flue surface to a small capacity may be adopted; but complicated forms have little to recommend them, and are expensive, except when so small as to be cast in iron; because the fire should be partially surrounded by slow conductors of heat to prevent the dissipation of heat being too rapid, and to render the combustion of the fuel perfect, and, consequently, effective; hence, a fire-place surrounded on three sides by brick is better than one in the middle of the boiler.

"23. The best mode of regulating the fire is by means of a door to the ash-pit, having a register, first suggested by Dr. Black, and afterwards put in practice by Count Rumford.

"24. I have now considered the most important points in the construction of a hot-water apparatus, and have shown that other fluids may be applied as well as water, when a more intense heating surface is desirable; and that a reservoir of heat may be obtained without having to wait till a large mass of water be heated before the heat has any effect on the house; and these, I hope, will be of some use in the application of this method of distributing heat."

58. *On the Degeneracy of the larger and finer Varieties of Persian Melons in the Climate of England.* By Thomas Andrew Knight, Esq. F.R.S. &c., President. Read Nov. 3. 1829.

Mr. Knight thinks "that it would be strange if every large and excellent variety of melon did not degenerate under our ordinary modes of culture. For every large and excellent variety of melon must necessarily have been the production of high culture and abundant food; and a continuance of the same measures which raised it to its highly improved state must be necessary to prevent its receding in successive generations from that state."

"Abundant food, it is true, is generally, perhaps always, given by the British gardener to his melon plants; but sufficient light, under the most favourable circumstances, can only be obtained during a part of the year; and a sufficient breadth of foliage to enable the melon plant properly to nourish a fruit of large size and rich saccharine quality, so that it may attain the highest state of growth and perfection which it is capable of acquiring, has rarely, and probably never, been given, in any season of the year, by any British gardener."

Mr. Knight has cultivated the Sweet Ispahan melon, and found it a very superior variety. We shall give his mode of culture in his own words: —

"The taste and flavour of the fruit, under the mode of culture which I have adopted, and which I shall proceed to describe, appear to me to be now quite as perfect as when the variety first came into my possession; and the weight of the largest fruit I obtained in the last season exceeded by more than 2 lbs. the weight of the largest which I raised under the same mode of culture from the seeds first put into my possession, it having weighed 10 lb. 6 oz.

"I have cultivated this variety generally in a brick pit surrounded by hollow walls, through which warm atmospheric air at all times enters abundantly; putting each plant in a separate large pot, and suffering it to bear one melon only. But the fruits set and succeed sufficiently well in a common hot-bed; and the important point to which I wish to draw the attention of the gardener is, the weight of fruit which any given extent of glass roof is capable of producing in high perfection. I have found that 13 in. square of glass roof will afford me 1 lb. of excellent fruit; but I sometimes obtain more: though, whenever I wish to save seeds, my wishes are to have rather less. This quantity will probably appear small to many who are in the habit of cultivating some other varieties; but, if the roof of a vinery were seen with a bunch of grapes of 1 lb. weight, at 13 in. distance from each other over the whole extent of its roof, the crop would be thought extremely great; though the vine has always the advantage of having its roots and stems, and leaves and blossoms, prepared in the preceding year, whilst the melon plant has every thing to do within the space of three or four months.

"The rind of the Ispahan, as of other Persian melons, being very soft and thin, the fruit is apt to sustain injury upon its under side, if it be not properly supported; and I, therefore, when I raise any of those varieties in a hot-bed, always place the fruit, whilst very young, upon a little machine in the form of a short broad ladder, of 1 ft. long and 4 in. wide. This, which has four slender cross bars, is supported at its corners by four forked pegs, which are stuck into the mould of the bed; and the fruit is thus raised some inches above the surface of the mould of the bed, and exposed to light, whilst the air is permitted to pass freely under it. I send a few seeds of the large melon above mentioned, with the hope that some other members of our Society will succeed as well in cultivating the variety as I have done; and that they will find it, as I have done, superior in merit to any of those which have subsequently been imported from Persia.

"Whenever it is my wish to obtain seeds of the Ispahan melon, I do not sow its seeds earlier than the middle of April, that my plants may grow and blossom in June, during the brightest weather of our climate, and ripen their fruit early in August.

"I have some reasons for believing that very valuable varieties of the melon may be obtained, for one generation at least, by cross-breeding between the smaller and more hardy varieties of green and white fleshed melons and the large Persian varieties. I obtained from one of our members, Captain Rainier, R. N. (to whom our gardens are indebted for some other valuable articles), a melon of a very singular character, from the seeds of which, and the pollen of the Ispahan melon, I obtained plants of more hardy and productive habits than those of the Ispahan melon, and which afforded fruit scarcely, if at all, inferior to that. The colour of the above-mentioned, which I received from Captain Rainier, is pale green, with longitudinal stripes of very deep green; and being very long and slender whilst young, it excited in the minds of several persons, when they first saw it, the idea of a snake lying amongst the leaves of the plant. During the growth of the fruit the pale green part of it acquires a very bright yellow colour, and this, as the fruit approaches maturity, slowly fades into the colour of box-wood. Its flesh being green and of good quality, though inferior in richness to that of the Ispahan, and the plants extremely productive of fruit, I introduced the pollen of the Ispahan melon into its blossoms with very beneficial effects upon the offspring. In the last season, I again introduced the pollen of the Ispahan melon into the blossoms of the cross-bred varieties; and from the seeds thus obtained, of which I send a small number, I confidently expect fruit of very great excellence. It is, I believe, very generally supposed that the offspring of cross-bred plants, as well as of cross-bred animals, usually present great irregularity and variety of character; but if a male of permanent habits, and, of course, not cross-bred, be selected, that will completely overrule the disposition to sport irregularly in the cross-bred variety alike in the animal and vegetable world, the permanent habit always controlling and prevailing over the variable. The finest varieties of melons are usually supposed by gardeners to be, comparatively with the pine-apple, fruits of easy culture: but experience has led me to draw a contrary conclusion, and to believe that more skill, and still more trouble and attention, are requisite, in almost all seasons, to insure a crop of melons in the highest state of perfection which that fruit is capable of acquiring. If the leaves of a melon plant be suddenly exposed to the influence of the sun in a bright day, which has succeeded a few cloudy days, for a short time only, they frequently become irreparably injured. If the air of the bed be kept a little too damp, the stems of the plants often canker, and the leaves and stalks sustain injury in the common hot-bed; and if the air be too dry, the plants, and consequently the fruit, are injured by the depredations of the red spider. The pine-apple, on the contrary, I have found (as I have stated in former communications) to be a plant of very easy culture; and I much doubt whether any pine-stove in the kingdom at the present moment contains as fine plants at the same age, and confined within the same limits, as my houses contain, and I am quite certain that the time and trouble expended in the care of these is not one fourth part as much as an equal extent of melon-beds would have required during any given period of the growth of the pine-apple plants."

(*To be continued.*)

ART. II. *Memoirs of the Caledonian Horticultural Society.* Vol. IV. Part II.

(*Continued from* p. 57.)

24. *Observations on the Culture of Onions.* By Andrew Duncan, sen. M.D. and Pres. Dated Sept. 1. 1818. Read Sept. 8. 1818.

THE object of this paper is to recommend the transplanting of onions as generally as leeks. Dr. Duncan says he is old enough to remember when transplanted leeks were rarely to be met with in any garden, and he does not despair of living long enough to see the transplanting of onions become as general. The practice is constantly adopted by Mr. Macdonald of Dalkeith, who puts soot about the roots, and by that means effectually protects the plants from the grub. Dr. Baird, from Bombay, states that transplanting onions has been long the universal practice at some of our settlements in the East Indies, as well as in many parts of the Malabar coast. In the latter country, young onion plants for transplanting are as currently sold as cabbage plants are in the Edinburgh market. James Warre, Esq., says the practice is common in Portugal, and thus describes it: — "Sow the seed about the end of November or December, on a moderate hot-bed, covered with a few inches of rich good mould, in a warm situation, merely sheltered from the slight frosts by mats. When the plants are about the size of a *large* swan's quill, or about April, they are transplanted on a rich light mould, well manured *with old rotten* dung, the plants at the distance of about 9 in. each way, generally in beds, for the convenience of access, laying the plants flat, covering lightly the beard or root, and *part only of the bulb*, with rich mould, well mixed with two thirds of old rotten dung; watering, if the weather is dry, until they have taken root; subsequently occasionally breaking the earth by lightly hoeing, keeping them perfectly clean from weeds, watering frequently, according to the state of the weather. There they have frequently means to water by irrigation, when, upon rich soils, they can grow them to a great size, particularly when they let the water run through small heaps of dung; though, when that is practised, or much water given, the onions do not keep so long as others. When ripe, they draw them gently from the ground, give a twitch to the tops, and leave them to season on the ground for a few days before housing, when they directly bind them into ropes with *dry* straw, not permitting them to sweat in a heap. Their preservation much depends upon the weather being dry and good when housed, and on their not being bruised."

25. *Remarks,* 1. *On the Propagating of certain Plants by Cuttings;* 2. *On the Inuring of certain Plants to our Climate;* 3. *On the Grafting of Orange Trees.* By Mr. John Machray, Errol. Read February 2. 1826.

A'ster argophýllus, *Pý*rus japónica, *Aúcuba* japónica, the stripe-leaved bramble, and the broad and narrow leaved myrtles, are rooted in an open soil, under hand-glasses, placed at the bottom of the south side of a north wall. The cuttings are put in from the middle of August to the middle of September, from 4 in. to 6 in. long, of last summer's shoots. They are matted up during the winter months, opened in March, and by the end of June they have struck roots. No air is admitted to the cuttings from the time of planting to the end of the July following, except what may be unavoidably given during the time of watering.

Oranges are grafted on lemon stocks in March, by the slit method, and a little moist moss tied round the parts joined, instead of clay. With bottom-heat, bell-glasses, and shading, they begin to push in ten days, and in a fortnight have made shoots 1 ft. long. The rest is routine.

26. *Description of an improved Flower-pot, with an interior movable Bottom.* By James Howison, Esq., of Crossburn House. Read Sept. 2. 1824.

These pots are not tapered; the false bottom is made of the same materials as the pot, raised a little in the middle, and full of holes for the exit of water, made wider in the lower than in the upper side. In shifting plants in such pots, the ball is forced out, by pressure against a peg fixed in a small piece of board, which Mr. Howison calls a shifting stand. We object to the plan altogether, because the extremities of the fibres must be injured by continued friction against the inside of the cylinder in pressing the ball upwards; in the common conical pot the fibres are not injured in the slightest degree. Mr. Howison, however, has used these pots with great satisfaction.

27. *Remarks on some Species of Edible Gourds, and on the Modes of dressing them for Table.* By Mr. Daniel Crichton, Minto Garden, Nov. 19. 1827. Read March 6. 1828.

Mr. Crichton prefers the cheese gourd, some of which have weighed with him 1 cwt., and the vegetable marrow; but he very judiciously attaches much more importance to the kind of cookery than to the variety cultivated. He, therefore, subjoins the three following receipts, as used at "Minto by M. Victor Desaurty, a cook eminent in his profession."

"*To make Soup of the Cheese Gourd.*—Take the fleshy part of the gourd when ripe, and cut it into small pieces; put it into a pan with a small bit of butter, set it upon a slow fire until it melt down to a puré; then add milk in the proportion of half a gallon to 4 lbs. of gourd; let it boil a short time with a little salt and sugar, enough to make it taste a little sweet; then cut some slices of bread very thin, toast it very well, and cut them into small dice; put them in a dish, and pour the puré over, and serve it up."

"*Cheese Gourd dressed in the Spanish Way.*—When ripe, cut the fleshy part into slices about half an inch thick; score it across into small dice about half through one side of the slices; scrape a little of the fat of bacon, and put it into a saucepan, with a little parsley, shallots, and mushrooms, chopped very small, adding a little salt and pepper; put them on a slow fire to fry a little, and place this seasoning upon the cut sides of the gourd slices. Put the whole into a quick oven, with a little butter or olive oil; and, when baked a little, serve up the dish."

"*To dress Vegetable Marrow.*—Take the fruit when about half grown; cut it lengthways through the middle (if large, cut into three or four slices); take off the outer skin; cut into small dice, about half through one side of the slices; then scrape a little of the fat of bacon, and put it into a saucepan, with a little parsley, shallots, and mushrooms, chopped very small, and let them fry a little; then add about a table-spoonful of flour, with a little salt and pepper, mixed all together; then put the slices of the vegetable marrow into a stewpan with a cover, and put the fried seasoning over the slices, and let them stew a little on a slow fire, with a little fire on the cover. When enough done, serve up."

The Society's silver medal was given to Mr. Crichton for this communication; it should have been given to the cook.

28. *On the Keeping of Apples.* By Mr. Wm. Oliver, Gardener to the Right Hon. the Earl of Rosslyn. Dated Dysart House, Oct. 31. 1827. Read March 6. 1827.

The fruit-room ought to be placed in a dry cold shady situation, free from wet, and sunk 3 ft. or 4 ft. in the ground. The shelves should be of beech or sycamore, about 2 ft. wide and 10 in. asunder. Fir shelving tastes the fruit. There is no need of fire in fruit-rooms, for a little frost does not injure apples. There ought to be ventilators, as a good deal of air is necessary after the fruit is first gathered and stored.

When the apples begin to drop, the ripest are gathered, and taken to the fruit-room in shallow baskets. These are taken singly out of the baskets, and placed upon the shelves.

"After the apples have been ten or twelve days on the shelves, the process of *sweating* is considered as accomplished. They are then wiped one by one with clean soft cloths; by this means a kind of *coat* or *shell* is formed, which proves a safeguard to the fruit. The shelves are wiped at the same time on both sides until quite dry. During the whole time the apples are in sweat, plenty of air is admitted, if the weather is clear and dry; but, if damp, the room is entirely shut up. I think it is when the apples are sweating that they imbibe the flavour of whatever materials they are laid upon; and, if due attention is given to them at that time, there is little chance of their afterwards acquiring any bad taste."

The fruit is turned over about the end of January, and, with the shelves, wiped, if any moisture appears. After this time the room is closely shut up; for the admission of much air, after the end of January, is found to occasion shrivelling. All the time the fruit is in the room it is carefully looked over every four or five days; and in the month of August it is handled with gloves, the hands of gardeners being generally moist at that season. When apples are frozen, no artificial means must be used to thaw them. If, when in sweating, they are affected by the frost or damp, they will be materially injured.

"I have gathered apples, and laid them upon one another in large baskets in a vinery, kept up to about 60° Fahr., for ten days or a fortnight: they were then covered with sweat. I had them wiped, conveyed to the fruit-room, and laid on the shelves, as already described. I have never found the flavour of apples treated in this way to be in the least impaired."

An extra-medal was awarded to Mr. Oliver for this paper.

29. *On preparing a light Garden Soil for Carrots and for Onions.* By Mr. Peter Campbell, Gardener to James Hamilton, Esq., of Bangour, Coalston, near Haddington. Read March 6. 1828.

The carrots on this light soil had been pierced to the heart by white maggots or worms, which no application had been found to destroy. Recourse was had to the plan of trenching in a mixture of old turf and quicklime, at the rate of 80 loads per acre; and on this the carrots "grew as good as could be wished for, and free of any insect."

Mr. Campbell takes up his carrots in dry weather in October; cuts off about half an inch of the carrots along with the tops, so as to prevent them from springing; as, when they spring, it takes away both the substance and the flavour of the carrots. He then digs out a pit about 1 ft. below the surface of the ground, of whatever size may be requisite to hold his winter stock, and builds the carrots neatly upon it, with the top ends out in the form of a cone, "without mixing any sand amongst them, or even straw on the outside of them, but covering the pit with earth to the depth of 12 or 14 in." To prove that carrots may be kept a long time in this way, Mr. Campbell has kept carrots of crop 1817 till March 1819. It may be noticed as a curious fact, that, in the course of this time, the carrots had grown about 2 in. longer at their smaller ends.

Onions are preserved from the maggot and rot by watering the beds with lime-water "to that degree that the lime lay one eighth part of an inch upon the beds."

30. *On the upright Training of Garden Rose Bushes, and of the Cydònia japònica.* By Mr. John Dick, Gardener at Ballindean. Read March 6. 1828.

Standard roses are formed without grafting or budding, simply by training up one of the strongest shoots of a dwarf plant. At Ballindean, on a sloping bank, 130 kinds are trained in this manner; and, rising above one another like an amphitheatre, have a very fine effect.

The Cydònia japónica is trained to a stake, and, after a time, forms a tolerable standard.

31. *Account of Oiled Paper Frames for protecting the Blossom of Wall Trees.* By Mr. Alexander Smith, Gardener to Thomas Bruce, Esq., at Grangemuir. Read Sept. 1816.

Various methods of protecting the blossom of wall trees in the garden at Grangemuir, but the oiled paper frames gave the greatest satisfaction. Their construction and application are very simple. The frames are made of any size, to answer the height of the wall. Those used at Grangemuir were 5 ft. by 3 ft.; "the thickness of the wood an inch and a half square, having five cross-bars mortised into the sides. Further, to support the paper, each frame is wrought with strong packthread, about 9 in. square; and the packthread is fixed with white tacks. The frame thus constructed is covered with coarse writing-paper, pasted to the wood and packthread with well-made paste. The paper should not be drawn very tight when first put on, as it is apt to crack in hot sunshine. When the paste is perfectly dry, a coating of boiled linseed oil is laid on both sides of the paper with a paint brush." One ounce of fine white lead, well mixed with every pint of oil before using, makes the paper more durable, and gives it more transparency.

Different methods may be adopted of fixing the frames against the wall. Mr. Smith placed temporary rafters, with the lower ends 2 ft. from the wall, and 4 in. in the ground; the top of the rafter made fast to a projecting board, in the manner of a coping, at the top of the wall. The frames are made secure to the rafters by short slips of wood nailed across each rafter, so as to serve as buttons or caps for keeping down the frames. It is to be observed, that, between these caps and the rafter, there must be a space of sufficient depth to admit of the frames being slipped up and down, for the purpose of inspection or giving air. To close the triangular ends of the spaces thus covered, triangular rafters are formed. The cost of the frames, 5 ft. by 3 ft., is 3*s.* each; their repair 3*s.* yearly for oil and paper; and the work is done in bad weather, when the men cannot labour out of doors.

The frames are put on when the blossoms are "pretty well out," and kept on till the fruit is set and beginning to swell. Mr. Smith received the Society's silver medal for this communication. We have no doubt of its perfect success; but we prefer protection by woollen netting, as not only cheaper, when the repairs are taken into account, but incomparably more neat, and even elegant: we say elegant, because the netting, and the manner in which it is fixed, have nothing of that heavy, cumbrous, and at the same time makeshift appearance, which wooden rafters stuck in the ground, and soiled paper sashes, such as carpenters substitute for glass windows when they are putting up new buildings, have in a garden. The products of luxury and refinement are not, in our opinion at least, worth obtaining, unless they can be attained by refined means. We should prefer purchasing our pine-apples, peaches, and grapes in the market, or going without them altogether, to growing them in wretched structures, among all manner of litter, disorder, and niggardliness. We mean these observations to apply generally, and by no means to Grangemuir more than to a thousand other places.

The silver medal was awarded to Mr. Smith, for the introduction of these oiled-paper frames.

32. *Notice of an improved Mode of glazing Hot-house Sashes.* By John Robison, Esq. Read June 7. 1827.

The method proposed is that of cutting the panes into long rhomboids, as invented by Mr. David Stuart, and adopted by him in his patent hot-houses. (See *Encyc. of Gard.*, fig. 265. *c.*)

33. *Account of Steam Pits for the Culture of Melons at Rockville, in East Lothian.* By Peter Dewar, Rockville, Sept. 4. 1827. Read Sept. 6. 1827.

The steam-pipes are made of potter's clay, and are laid in a bed of earth, 2 ft. below the surface, and there is also a pipe of the same material above the surface.

34. *Notice regarding the Ionian Melon and the Malta Melon.* By Mr. Daniel Crichton, Gardener to the Right Hon. the Earl of Minto. Read August 2. 1827.

The Ionian green-fleshed melon is an excellent early or summer fruit, and the Malta melon is an excellent fruit either for summer use or for keeping. If grown late in the season, and cut before it is too ripe on the plant, it will keep many weeks. The silver medal.

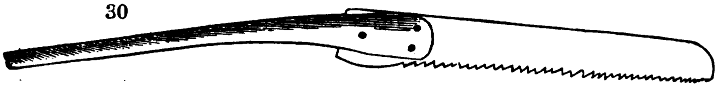
35. *Notice regarding the Cause of Canker, the Natural History of the Red Spider, &c.* By Mr. Wm. Blair, Mount Stuart. Read March 1. 1827.

Mr. Blair is of opinion that the canker arises from an unfitness in both soil and climate; and, as a bad soil makes a bad climate, he concludes that the best way to prevent the canker is to form gardens only on fertile soils. Many hardy as well as in-door plants are liable to be infested with the red spider, of which there appear to be several species. Mr. Blair paints the bark of the stems and branches wholly over with a mixture of tobacco liquor, sulphur, and a little turpentine during winter; and no insects of any kind appear during the following summer.

36. *Notice regarding Indian Saws.* By John Robison, Esq. Read Nov. 11. 1825.

The Indian pole-saw (*fig.* 30.) has "a blade 4 in. broad, and 18 in. long, fixed to a pole-handle of any required length; the line of the teeth should be inclined a few degrees from the line of the pole, to allow of the saw cutting easily without any pressure on the handle."

30



The Indian hand-saw (*fig.* 31.) has a blade of the same

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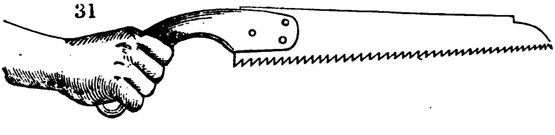

size as that of the pole-saw, and a gripe or handle, which should be such as to bring the forefinger and the thumb of the right hand nearly in a line with the teeth of the blade.

The sole advantage of these saws consists in their operating by pulling instead of by thrusting. As they have stiffness enough to carry them through the wood when not cutting, there can be no possibility of bending or breaking them during the pulling and cutting.

37. *On the Utility of gathering unripe Tomatoes, and maturing them on Shelves in Hot-houses.* By Mr. Wm. M'Murtrie, Gardener to Lord Anson, Shugborough Gardens. Read April 5. 1827.

The tomato ripens with difficulty on the open walls in Staffordshire. About the 20th of October, Mr. M'Murtrie cuts all the fruit that may have ripened and the best-swelled green fruit. The latter he places in a stove or hot-house, and in three weeks or a month they ripen as well, acquire as fine a colour, and are as good in every respect, as if they had come to maturity out of doors. Another gathering, to be treated in the same manner, was made about the end of October. Those who have not a hot-house may hang them up in a warm kitchen. The consumption at Shugborough is about two bushels a year, which are produced by about 80 plants.

38. *On budding the Peach upon the Apricot.* By Mr. W. M'Murtrie. Read April 5. 1827.

In 1824, Mr. M'Murtrie inserted a quantity of peach-tree buds in the branches of Moor Park apricots, which made fine healthy wood, and in 1826 produced fruit far superior to that on the peach trees. Mr. M'Murtrie is not prepared to say from what cause, but merely speaks as to the fact. In a postscript, dated April, 1828, he states that his expectations were fully realised by crop 1827. "The fruit was larger and finer than that on the peach trees; which confirms me in the opinion that the practice will be of utility."

39. *Hints and Notices connected with Horticulture.* By John Murray, Esq. F.L.S. &c. Read June 7. 1821.

Uniformity of Insular Climate. "The ocean preserves a uniform temperature unknown to inland countries; and the difference in its waters, between the summer and brumal months, will not exceed 3° or 4° Fahrenheit. Small islands will especially participate in this uniformity; for the air incumbent on the bosom of the great deep will receive the impress of its temperature from that on which it constantly reposes, and is in contact; and this again, blending with that over the islet, will maintain an equilibrium of temperature, and protect it from sudden vicissitudes."

*Camélli*a *japónica*. A plant of this shrub has withstood the severity of the winters of 1819 and 1820, in the garden of Mr. Welsh, in the neighbourhood of Inverness. The plant has grown ever since on the face of a dry sandy bank, with a south-west aspect and an inclination of 45°, nearly a mile from the sea. Plants intended to be acclimated, Mr. Murray justly observes, should never be too small.

Preservation of Fruits. In the north of Italy, grapes gathered in dry weather, and freed from such as are bruised or spoiled, are placed gently, stratum upon stratum, in a box, to the amount of three or four layers, with thin layers of peach leaves between. The boxes are then placed on shelves in a dry airy room, and the grapes keep well till the January or February following.

Fruits in Domestic Wines. "In the south of Italy, the Italians suspend the bunches of grapes to the ceiling of rooms and in outsheds, and the taste acquired is sweeter than before, in which, too, the flavour of the raisin predominates. If ripe gooseberries or currants be permitted to remain pendent on the bush, additional saccharine matter seems to be elaborated, and the fruit becomes much sweeter."

On Wall Trees. "It would be well, could we so adjust our trees to the wall, as to make removal during winter and early spring frosts practicable. We would thus be able to triumph over the destructive ravages of frosts on the early blossom, and also to clear away the chrysalids and ova of insects, with decaying leaves and other causes and sources of injury."

40. *On the Gooseberry Caterpillars, and the Application of Heat for their Destruction.* By Robert Thom, Esq., Rothesay. Read Dec. 7. 1820.

Mr. Thom observes, "that instead of one brood in the season, as described by all former writers on the subject, there are often four or five distinct generations; and that two flies, coming up in the spring, *may* in that season produce above sixty millions of caterpillars. During the whole of last spring and summer a regular succession of these pupæ was confined in pots, filled with earth, and placed in the garden, so as to have the same exposure as those that went into the earth beside the bushes. Various ingredients were put into these pots with the view of killing the pupæ, but to no purpose; the flies still continued to come up at the usual periods;

till the 26th of June, when all at once they ceased; nor did any that were in the pupa state in these pots ever come up afterwards.

" Suspecting that the great heat of the weather at this time either killed them or delayed their coming up, I placed a pot containing pupæ (that had just gone down in the shade), in a cool cellar, and at the usual period the flies came up.

" I then took a number of pots (filled with earth), containing pupæ fully incrusted; upon some of which I poured boiling water; upon some unslacked lime, pounded to the size of small peas, was put, and mixed with the earth 2 in. deep; others were allowed to remain as they were. Flies from the last came up at the usual time; but those that received the lime or the hot water never produced flies. This was repeated several times, and always with the same result.

" In winter, therefore, when all these insects are in the pupa state, I would advise cultivators to lift about 2 in. deep from the surface of the soil in the gooseberry plots, then to spread on hot lime, pounded, as before noticed, about three times as thick as ordinary liming, and return the lifted soil over the lime, keeping still the old surface uppermost, and clapping the soil gently down with the back of the spade. Great care must be taken that the lime is unslacked and regularly spread, as it is merely the *heat* produced by *slacking* that kills them. If the lime is too much for the soil, it may be exchanged in the spring for soil from another plot.

" When boiling hot water is used, it should be put on when the soil is *quite dry*, and precisely in the same way as the lime; lifting the soil to the same depth, and returning it in the same manner, as soon as the water is poured on.

" In this way the pupæ will be all *above* the hot water or lime; and thereby receive the full effect of the heat as it passes upwards.

" Where there is great space between the bushes, some lime or water may be spared, by burying the surface soil at least 1 ft. deep, and tramping it firmly down in the bottom of the trench: but near the bushes this cannot be done for the roots, as the pupæ frequently attach themselves to the under sides of these; and hence, though trenching down the surface soil does destroy a part, it can never destroy the whole: and I have even seen a fly come up when the pupa had been buried 8 in. deep, and the earth pressed down upon it. As to the removal of the soil, it is quite useless, as the fly easily finds its way back to the bushes.

" As heat appeared to be the only agent fatal to these insects in the pupa state, I next tried its effects upon them in the caterpillar state; and found that water, heated to 140° Fahr., and thrown forcibly upon them through the rose of a watering-pot, kills them, *and without injuring the tenderest leaves on the bushes.* But care must be taken to have the water nearly at that temperature; as, if five degrees lower, it will scarcely kill the larvæ; and, if more than five higher, it will injure the bushes; so nearly does the vitality of the caterpillar coincide with that of the leaf on which it feeds.

"But water thrown upon them in this way even as low as 120° makes them drop instantly from the bush; and I would therefore recommend to beginners to use the water at this temperature; a cloth being spread under the bush, to collect them for destruction, as afterwards mentioned.

"Of all the other things that I have seen recommended, and many more that I have tried, none kills the caterpillar without injuring the bushes. Here, as usual, the simplest of all agents is the most powerful.

"From a great variety of experiments, I found that the duration of life of the insect varied considerably, according to circumstances, in all its stages, except in the fly state, which appears to be uniformly from nine to eleven days. In this state it seems to take no food. It generally lays most of its ova on the second, third, and fourth days, but sometimes continues to lay a few till the seventh or eighth day. Under the most favourable circumstances the ova are hatched in seven days; the life of the caterpillar is fifteen days, of the pupa eighteen days. In the most favourable weather for that purpose, therefore, a new generation is produced every forty-two days, namely, four days for the fly to lay its eggs, seven days for these to hatch, fourteen days in the caterpillar, and seventeen in the pupa state; and, as the first flies for the season generally come up about the beginning of April, and continue to come up, if the weather is fine, as late as the end of October, there may be five distinct generations in one season. They are, however, subject to many incidents, and therefore seldom more than two generations, of any considerable extent, appear in one season.

"They are generally said to be extremely voracious, but this is owing to their great numbers; for, upon an average, each caterpillar barely eats one leaf during its whole life, the female eating more than double of what the male eats. For the first five or six days they eat very little, each at that time having made only a small hole in the leaf, of about one tenth of an inch in diameter. It is in the last four or five days that they make the havoc on the bushes; and the damage is therefore nearly all done before it is discovered. Those who look properly after them, however, have time enough to prevent it, by destroying them while young. When just emerging from the ova, they are extremely helpless, and easily destroyed. A heavy shower, or blast of wind, will then throw them to the ground, where they perish. This is the weak period in their existence, and probably at this stage nine tenths of the whole perish upon the average of years; and hence it is only in particular seasons that we hear much of them. Calm, mild, but rather moist and cloudy, weather is most favourable for them at this stage; but after they are a few days old, no weather will kill them, although favourable weather brings them sooner to maturity.

"The insect is male and female, but the ova of the female produce caterpillars, even when the male and female flies are kept separate. How long this offspring would continue to breed has not been ascertained; but by following up the experiments it might be very easily done. There is some reason to suspect that there is a connection between the male and female *caterpillars;* for I have frequently observed them twisted together for some time after they had ceased eating, and a little before they cast their skins to go into the pupa state. By a little more attention this may be fully ascertained."

(*To be continued.*)

ART. III. *Catalogue of Works on Gardening, Agriculture, Botany, Rural Architecture, &c., published since January,* 1831, *with some Account of those considered the most interesting.*

In enumerating the contents of the Botanical Periodicals, those genera or species marked by a star (*) are not included in the first edition of the *Hórtus Británnicus.*

BRITAIN.

Curtis's Botanical Magazine, or Flower-Garden displayed. New Series. Edited by Dr. Hooker. In 8vo Numbers, monthly. 3*s*. 6*d*. coloured; 3*s*. plain.

No. XLIX. for January, contains

3039 to 3045. — Hedýchium flàvum *Roxb.*; which differs from H. flàvum of Sims in *Bot. Mag.*, t. 2378., this latter being identical with H. flavéscens of Wallich. "The present subject is a splendid species, with numerous very large, orange-coloured, highly fragrant blossoms. Flowers in the stove in August." — Alstrœmèr*ia* pállida. A species first authenticated by Dr. Graham in *Edin. Phil. Journ.*, vol. xiv. p. 435.; it is very beautiful, and approximates to A. *Pelegrìna*, consequently will thrive at the base of a warm wall in the open air. Flowers in July. — Gesnèr*ia* bulbòsa. A plant not rare at the present day, but still not so common in collections as its large, showy, scarlet flowers entitle it to be. Blooms in spring, inhabits the stove, and is a native of Brazil. — Sphenógyne crithmifòlia

Brown. Native of the Cape of Good Hope; blooms in the green-house in July. This plant, though duly distinct, is not, for purposes of ornament, preferable to Othónna *a*brotanifòlia.—*Urèna* lobàta. A downy dwarf shrub, flowering in the stove in July, with smallish rose-coloured blossoms. Native of China and Brazil, and in the latter place is used as an emollient. — Schizánthus *Grahàm*ii*, Schizánthus retùsus. Two most charming additions to this gay, elegant, airy, much admired genus: a fifth kind, S. Hookèr*ii*, is promised to be figured in a future number. Dr. Hooker deems S. retùsus the most beautiful of all.

No. L. for February, contains

3046 to 3052. — Adàm*ia* cyànea, Blue-*berried* Adamia; Caprifoliàceæ and Hydrangeàceæ *Lindley.* An elegant shrub, introduced in 1829; 3 or 4 feet high, covered with large panicles of pale blue or pink flowers, which are succeeded by an almost equally ornamental profusion of deep blue berries. It is a native of barren, stony, and mountainous places near Bechiaco, in Nepal. Rare; the plant from which the drawing was taken flowered at Kew. — Commelìn*a* *grácilis, Slender Commelina; Commelín*eæ*. A new and pretty species, described by Dr. Graham in the *Edinburgh Philosophical Journal* for December last as C. formòsa; but the Doctor has since discovered its identity with C. grácilis of Ruiz and Pavon. From seeds received from Mr. Cruickshanks in the spring of 1830, who had gathered them in the valley of Lima. Flowered freely in the green-house in July. Perennial. Propagated by cuttings. — *Loàsa* *incàna, Hoary Loasa; *V*erbenàceæ. A new addition to the peculiar order *Loàseæ.* Suffruticose, low, and branching; flowers white and abundant, opening in the end of summer, and through the autumn. Native of Peru; and, with us, a south-border plant. — Clerodéndrum nùtans, Nodding Clerodendrum. A stove shrub of great beauty, from its long pendulous panicles of white flowers. Native of Silhet, on the north-east side of Bengal. — Alstrœmèr*ia* *acutifòlia, Acute-leaved Alstrœmeria; Amaryll*ídeæ.* Stems 5 or 6 feet high, somewhat twining. Seeds of a bright scarlet colour. Found in Mexico by Mr. Deppe. Bloomed in the stove at the botanic gardens of Edinburgh and Liverpool. A great acquisition. For further information, see p. 218. Sweet's *British Flower-Garden.* — *Codiæ'um* (from *codebo*, the Malayan name for the *C*ròton variegàtum of Linnæus) píctum, Painted-*leaved* Codiæum; *E*uphorb*iàceæ.* The flowers of this shrub, the *C*ròton pícta of our *Hórt. Brit.*, are obscure, but this deficiency is amply compensated by the singularity and beauty of its foliage, which renders it a most desirable inmate of the stove, and which has recommended it to the inhabitants of the Molucca Islands, of which it is a native, and where they cultivate it around their houses, and for the purpose of fences, decorating their triumphal arches with its leaves, and strewing them about on occasions of festivity. — Bánks*ia* speciòsa, Handsome Banksia; Prote*àceæ.* Leaves 1½ ft. long, 1½ in. broad. Spikes or heads of flowers 4½ in. long, and 3½ broad. Shrub above 5 ft. high, blooming in the green-house in October. Flowers yellow.

Edwards's Botanical Register. Continued by John Lindley, F.R.S. L.S. &c., Professor of Botany in the London University. In 8vo Numbers, monthly. 4*s.* coloured.

No. XI. of Vol. III. (New Series) contains

1377 to 1383. — *L*upìnus polyphýllus *albiflòrus. The white-flowered variety of the large-leaved perennial lupine, a plant so very ornamental that no hardy flower garden will long be without it. It is, however, rare and difficult to procure at present. We saw it finely in blossom, last autumn, in the nursery of Messrs. Whitley and Co. It is perfectly hardy. — Plumièr*ia** Lambert*iàna.* A species raised from Mexican seeds, by Mr. Lambert, who has paid much attention to this beautiful genus, and thinks the present different from every species yet published. Professor Lindley, in devising the specific name, has been pleased to swell the catalogue of botanical compliments already paid to Mr. Lambert; his unbounded liberality, however, certainly entitles him to every one of them. P. Lambert*iàna* is an ornamental stove plant. — Potentílla *argùta. An upright-stemmed, hardy, perennial species, blooming in July, producing fine large foliage and a dense panicle of yellowish white fair-sized flowers. This, in foliage and inflorescence, is a fine plant, needing only the colour of P. formòsa or P. atrosanguínea to render it very ornamental. It would be an eligible stock for Mr. Dennis, or some other able cultivator, to attempt the raising of hybrids from. — Justíc*ia* *venústa, Beautiful Justicia. Brought, under this name, to England by Dr. Wallich. A lovely species, with a large and spreading panicle of numerous smallish deep purple flowers. Native of the Pundua Mountains in Bengal. A stove plant, blooming in September. — Lophospérmum (from *lophos*, a crest, and *sperma*, a seed; the seeds being crested or winged) erubéscens (from *erubesco*, to grow red, or to blush), Blushing Lophospermum. A most beautiful shrubby Mexican climber, which will thrive perfectly and flower abundantly in sunny sheltered aspects in the open air during summer. It may be rapidly multiplied, as cuttings planted in sand and placed in a frame or warm greenhouse strike root readily. The lophospermum, like the georgina, is from Mexico, and like the georgina it will not endure frost; but, as soon as the frosty nights of spring are all past, let it be instantly turned out, and its vigorous and rapid growth will render it, by the middle of autumn, or perhaps before, a bushy branchy vine, exhibiting along its branches, especially towards their extremity, festoons and garlands of large, rosy, trumpet-shaped flowers. This style of blooming will be continued till the destruction of the plant by autumnal frost. The quantity of flowers produced will be increased, and their colour improved, by inserting the plants into calcareous or other poor soil in preference to that more indulgent, as highly manured soil induces a redundance of shoots and foliage, and delays the formation of flowers. — Sphácele*campanulàta. A hardy green-house plant, or perhaps a frame plant, from Chile, with pretty pale blue blossoms. — Grevíll*ea* concínna. A green-house species from the south-western coast of New Holland, having rose-coloured blossoms (calyces). It is, notwithstanding Prof. Lindley's identification, very distinct from G. concínna, being the G. Cunninghàm*ii* of *Brown's Supplement.*

No. XII. for February, contains

1384 to 1391. — Browáll*ia* *grandiflòra, Large-flowered Browallia; *S*olàneæ. A beautiful little plant, apparently annual, and perhaps to be preserved by cuttings; at least this is to be hoped, as it has not yet yielded seed in this country. Native of Yazo, in Peru, found there by Mr. Cruickshanks, who presented seed of it to the Horticultural Society, in whose garden it flowered from July to November last. Plants in the open ground suffered so much from the constant rain and gloom, that they scarcely opened their flowers; but the individuals in the green-house were covered with a constant succession of blossoms, producing a very pleasing effect by their changeable hues, varying from pale pure blue to white, with a deep yellow eye. — *A*nemòne **vitifòlia*, Vine-leaved Anemone; *R*anunculàceæ. An ornamental whitish-flowered plant of Nipal, where it grows in all the forests of the great valley and surrounding mountains, delighting in the most shady, retired, and moist situations in the vicinity of rills and torrents. Found also in Kamoon. Blossoms in August and September. A frame plant. — Cùphea *Llàve*a*, La Llave's *Mexican two-petaled* Cuphea; Salicàriæ. An interesting frame herbaceous plant, stems numerous, 1½ ft. high; petals deep purple. Introduced by Mr. Ackermann, who presented its seeds to Mr. Tate, in whose nursery it flowered in August last. — Potentílla

*Hopwoodiàna, Hopwood's *hybrid* Cinquefoil. Professor Lindley intends at intervals to figure the most splendid garden varieties, indicating them only as "Garden Varieties," in the manner adopted by us in *Hórt. Brit.*, without puzzling himself on the genealogy of their origin. — *Láthyrus* tingitànus, the Tangier Lathyrus *or Pea;* Leguminòsæ. A very showy annual truly, but, we believe, by no means so rare as Professor Lindley imagines. It possibly owes its comparative unfrequency to *Láthyrus* odoràtus, the sweet pea, which to equal beauty adds an exquisite fragrance. — *Ròsa* *rùga, the Wrinkle, *or* Ruga, Rose; *R*osàceæ. "A most beautiful garden variety, said to have been raised between *R.* arvénsis and the sweet-scented Chinese rose, and sent from Italy to the Hort. Society by Mr. Clare. It is extremely free of growth, making shoots 10 or 12 ft. long in a year; and therefore is particularly well adapted to climbing over old pales, or to covering any other place in which a wildness of appearance is desirable. The blossoms grow in bunches, are of the size of the sweet-scented Chinese rose, and fully as fragrant; in colour they are rather deeper, especially before being fully expanded, when they approach the tint of the charming variety known in the gardens under the name of the Double Hip. Very readily increased by cuttings." — *Loàsa* *ambrosiæfòlia, Ambrosia-leaved Loasa; *Loàseæ.* A beautiful new annual species from Lima, with large foliage and large yellow blossoms. It is the *L.* híspida of Graham. From the garden of the Horticultural Society, where, planted on the south side of a yew hedge, it grew vigorously, became 2½ ft. high, produced flowers and seeds freely from July to September, and, indeed, until destroyed by frost. — *S*èdum Cepæ'a, *Panicled* Stonecrop; Crassulàceæ. An annual species with small white flowers; but as they are numerously produced, the species is desirable for shingly borders, tops of old walls, and for rockwork.

The British Flower-Garden. New Series. By Robert Sweet, F. L. S. &c. In 8vo Numbers, monthly. 3*s.*

No. XX. for January, contains

77 to 80. — *Alstrœmèria* *acutifòlia. An extraordinary and most interesting climbing species of this peculiar and highly beautiful genus. The flowers are tubular rather than campanulate, of a crimson colour, and produced nine or more together in umbels. It bloomed in a southern border, at the foot of the foundation wall of the stove, in the open air, in the garden of Charles Barclay, Esq., of Bury Hill, from August to November last. It had been received, along with many other rare and interesting plants, from M. Otto, of the Berlin botanic garden, and is a native of Jalapa, in Mexico. — *Nèja* gràcilis. A neat diminutive Mexican shrub, with yellow compound flowers; produced abundantly in autumn. Propagated by cuttings. In a favourable aspect, and with shelter, will survive our winter. — Saponària *calábrica. A pretty spreading species of soapwort, with rose-coloured blossoms, more bright than those of S. ocymöìdes. A most desirable plant for the sunny side of rockwork. Whether annual or perennial is not yet ascertained. Native of Calabria, consequently quite hardy. — Campánula púlla. A diminutive hardy perennial, producing numerous dark blue flowers; indispensable in every collection of potted hardy plants.

No. XXI. for February, contains

81 to 84. — Escallònia *glandulòsa, Gland-bearing Escallònia; Escallòn*eæ.* An evergreen, a native of Chile; and, in the garden of Mr. Lambert, has attained the height of 5 or 6 ft., forming a handsome, upright, bushy shrub, and producing its racemes of white flowers in autumn, when little else is in flower. "Succeeds well in a light rich soil if planted in the border, but must, with a mat or some slight covering, be protected from severe frost; if grown in a pot, a mixture of two thirds sandy loam and

one third peat will suit it well: cuttings nearly ripened will root freely in pots of sand under a hand-glass."—*A*sclèpias amœ̀na, Delightful Swallow-wort; *A*sclepiàd*eæ*. A hardy perennial, increased by dividing at the roots; its stems, 4 or 5 ft. high, are surmounted by large umbels of purple flowers, which open in July and August. Native of North America, from New England to Virginia, and delights in heat and moisture.—*R*ùbus nutkànus, Nootka Sound Raspberry; *R*osàceæ. A welcome addition to our stock of hardy flowering shrubs. *R*ùbus odoràtus, the Flowering Raspberry, as it is emphatically called, because it was, for many years, the only species with showy flowers, gives a good idea of *R.* nutkànus; but the latter has white blossoms, and is more compact in its mode of growth.—Anisánthus spléndens, Splendid Anisanthus. A most desirable frame bulb, from the Cape in 1825, producing a stem a yard high, and a spike of bright scarlet flowers nearly a foot in length. The bulbs were potted in a mixture of nearly half turfy loam, one fourth of fine white sand, and the rest peat, in which they throve exceedingly well: they are now planted out in a pit.

Botanical Cabinet. By Messrs. Loddiges. In 4to and 8vo Parts, monthly. Large paper, 5*s.*; small paper, and partially coloured, 2*s.* 6*d.*

Part CLXV. for January, contains

1641 to 1650.—Pentstèmon Richardsòn*ii*, which flowers through the greater part of the summer; and is so ornamental that no hardy flower garden should be without it.—Swainsòn*ia* albiflòra. An ornamental green-house plant, from New Holland in 1826. Blossoms white, pea-shaped.—Nigritélla angustifòlia. A curious hardy orchideous plant, with dark-coloured blossoms, expanded in June and July.—Campánula thyrsöídea. An elegant hardy biennial, a foot high, with multitudinous cream-coloured blossoms; rarer in nurseries than in botanic gardens. Native of Hungary, Austria, and Switzerland.—Maxillària *galeàta. Another new, very desirable, stove orchideous plant; blooms in August.—*E*rìca óllula. An elegant species of heath, its blossoms red and shaped like a pitcher, as the specific name imports.—*O*'xalis *carnòsa. From Chile in 1825, blossoms yellow, leaves used as a substitute for sorrel in its native country.—Andrómed*a* *chinénsis. A desirable and very rare green-house species, from China; sent to Messrs. Loddiges, in 1829, by their valuable friend Mr. Reeves of Canton.—Calceolària thyrsiflòra. A beautiful abundantly blooming species from Mendoza; and, although a green-house plant, indispensable, as a summer ornament, to every hardy flower garden. It, like all the other shrubby species of this delectable genus, propagates freely by cuttings.—*I*'ris ruthénica. An interesting, blue-flowered, grass-leaved species, almost as diminutive as its near ally *I.* hùmilis.

Part CLXVI. for February, contains

1651 to 1660.—Stapèl*ia* élegans, Elegant Stapelia; *A*sclepiàd*eæ*. A minute species, forming compact tufts; flowers small, produced in summer.—Salpiglóssis pícta, Painted Salpiglossis; *S*olàneæ. The now well known Chilean beauty.—Habenària bifòlia, two-leaved Habenaria; *O*rchídeæ. The *O*'rchis bifòlia of Smith. A prevalent plant in woods in Suffolk; the fragrance of its blossoms at night surpasses that of any other flower we know, even honeysuckle sinks in comparison.—Alstrœmèr*ia* ovàta, Ovate-*leaved* Alstrœmeria; Amaryllíd*eæ*. Herbaceous climber, to the height of 6 ft. or more. Survived in a warm border, out of doors, the severe winter of 1829, along with A. pulchélla, and A. Hookèr*i*. Flowers from July till late in autumn. Native of Chile and Peru. Increased by detachments of offsets at the root, and by seeds.—*E*rìca incarnàta, Flesh-coloured Heath; *E*ríceæ. A low-growing bushy kind, blooming abundantly during summer; corollas inflated.—*E*rìca cruénta, Blood-coloured Heath; *E*ríceæ. Flowers numerous, corollas tubular.—Heterotáxis crassifòlia, Thick-leaved Heterotaxis. From Jamaica, in 1823, by Mr. Lee. An unshowy stove orchideous plant. — *H*emerocállis *lanceæfòlia, Lance-leaved Day Lily. A hardy perennial from Japan, of easy culture and of great interest, as being to all appearance an additional legitimate species of the genus Fúnk*ia*. Flowers lilac-coloured, produced in summer. — Escallòn*ia* *rùbra, Red-*flowered* Escallonia; Escallòn*eæ*. For treatment, see under *E*. glandulòsa. Above 27 species of this genus are described, yet not more than six have been introduced. —*A*nemòne palmàta lùtea, Yellow-*flowered* palmate-*leaved* Anemone. Perennial, from Portugal and Algiers, flowering in May and June. Increases slowly by separation of roots, should have protection in severe weather, and prefers light and sandy soil. We have known it thrive without protection, and beside a little hollow, in which water stood at every shower of rain.

The Botanic Garden. By B. Maund, F.L.S. &c. In small 4to Numbers, monthly. Large paper 1*s*. 6*d*.; small paper, 1*s*.

No. LXXIII. for January, contains

289 to 292. — Calámpelis scàbra. The beautiful hardy climber, which has hitherto been erroneously denominated Eccremocárpus scàber; blooms from July till stopped by frost. — *P*halángium Liliàgo; the Anthèricum Liliàgo of Linnæus. A hardy border perennial, producing clusters of pretty white flowers in May and June. — *L*upìnus polyphýllus. One of the most splendid of hardy perennials; blooms in July and August. — *L*ílium chalcedónicum (so called from Chalcedon, a city of Asia), the Scarlet Martagon Lily, or with some the Scarlet Turk's-cap Lily. Flowers in June and July.

This number concludes the third volume, and contains titlepage and index.

No. LXXIV. for February, contains

293 to 296. — *V*erbèna *c*hamædrifòlia, Germander-leaved Vervain; *V*erbenàceæ. Of this very popular beauty it is remarked: "Its flowers are intensely brilliant, without glossiness, and yet it has a dazzling effect on the sight, not unlike the lustre of a polished metal. The eye cannot rest upon it without evident uneasiness. If any artist or artisan, in the pride of his heart, assume to himself excess of merit for the tints he has discovered, let him look on this plant, and subdue the intemperate heat of his imagination. Nothing surely can be better adapted to turn man's thoughts off his own self-sufficiency than the works of nature. Wherever he rests his attention, whether on matter organised or unorganised, there he will discover convincing evidence of his own ignorance; and, at the same time, the omnipotence of a first great Cause will be impressed on his heart and understanding." — *Verónica* pinnàta, Wing-leaved Speedwell; Scrophulárinæ § *Veroníceæ*. A pretty herbaceous perennial. — *R*anúnculus *p*latanifòlius flòre plèno, Double-flowered Plane-leaved Crowfoot, *or Fair Maids of France*. Loves sandy reddish loam, and a pure atmosphere, being a native of mountains. — Cortùs*a* Matthìol*i*, Matthiolus's Cortusa. A choice elegant plant, which *P*rímula cortus*òides* so exactly resembles, that the latter has derived its specific name from the similitude. "The cortusa is successfully kept in a pot of loam and peat. Shade and a tolerably free supply of water in summer, with the cold frame protection in winter, combined with moderate attention, will preserve it in vigour." A little leaf mould added to the above compost suits it well, and we have grown it so as to produce us numerous seeds, which, when sown, grew readily. Boerhaave, in his *History*, says the herbage is fragrant, and that the plant inhabits sandy and argillaceous soils.

*Chandler and Booth's Illustrations and Descriptions of the Camell*ièæ. In Imperial 4to Parts, every two months. 7*s*. plain; 10*s*. coloured; and 18*s*. extra-size.

Part VI. for December, contains

21. — Caméll*ia* japónica *a*nemoneflòra álba, White Anemone-flowered Japanese Camellia, *or White Waratáh.* A most elegant variety, raised from the pompone, with blossoms of a delicate white colour, a little striped, and occasionally spotted with pale red, and from 3½ to 4 in. over.

22. Caméll*ia* japónica imbricàta, *Crimson Shell*, *or* Imbricated Japanese Camellia Unquestionably one of the best varieties that has lately been imported from China. The flowers are upwards of 3 in. in diameter, and extremely symmetrical in their formation, as much so as those of the universally prized double white. " The colour is a fine crimson red, and remarkably showy. Representations of this variety are sometimes seen in Chinese drawings, but our figure is the only one which has yet been published in this country."

23. Caméll*ia* japónica Woóds*ii*. A seedling raised by Mr. Chandler, who named it in compliment to Mr. Woods of Camberwell Grove, a great admirer of camellias. " Its flowers are particularly handsome, and well formed, and are nearly 4 in. across. Their colour is pale red, similar to that of the common Provence rose, which at a distance they resemble, except in being larger, although not so double.

24. Caméll*ia* japónica punctàta, Dotted-*flowered* Japanese, *or Gray's Invincible*, Camellia. Raised in 1824, by Mr. Press, gardener to E. Gray, Esq., " from a seed of the semidouble red, whose flowers had been impregnated with the pollen of the single white. The expanded blossoms are from 3 to 4 in. over, of a very delicate blush colour, almost white; striped, and slightly spotted with pale rose, in the manner of a rose flake carnation." This is deemed an extremely fine variety. For an account of four other varieties of great merit, also raised by Mr. Press, see Gard. Mag., Vol. II. p. 358.

The Florist's Guide and Cultivator's Directory, &c. By Robert Sweet, F.L.S., &c. In 8vo Numbers, monthly. 3*s*. coloured; 2*s*. plain.

No. XLIII. for January, contains

169 to 172. — Strong's Esther Tulip. A new and very desirable bybloemen, bred and broken by W. Strong, Esq. — The Tiaro Ranunculus. A neat and pretty kind, raised from seeds, by the Rev. Joseph Tyso of Wallingford, in the manner described in the excellent article communicated by that gentleman to the Gard. Mag. (Vol. VI. p. 548.) " In figuring our next ranunculus, we shall give our own remarks on the same." — Mademoiselle d'Orléans Carnation. A fine new variety of the rose or pink flake class, grown by Mr. Hogg of Paddington Green. — Davey's Queen Adelaide Picotee. A handsome new yellow Picotee, raised in 1828, by Mr. T. Davey, King's Road, Chelsea, who hopes to have it for sale next summer at as low as 15*s*. the pair. Mr. Sweet remarks that picotees are more tender than carnations, especially the yellow picotees.

No. XLIV. for February, contains

173. to 176. — Lord Brougham Tulip. A bizarre for the first row of the bed, with a well-formed flower of a rich golden yellow, and handsomely marked; it will be a valuable acquisition. Raised from seeds by J. P. Burnard, Esq., with whom it first broke into colours in 1829. — Leonora Ranunculus. One of the handsome seedlings that have been raised by the Rev. Joseph Tyso, in his collection at Wallingford, where they are cultivated and sold for charitable purposes. Mr. Sweet here fulfils the promise made in his last number, to give his remarks on raising seedlings; and they are so excellent and practical, in consequence of Mr. Sweet's unequalled experience, that we present them entire to our readers.

" In the first place, it must be more advantageous, and there will be much more likelihood of raising a great number of double flowers from the seeds, if the flowers they are procured from were fertilised with the pollen of semidouble or nearly full double flowers, as many of these produce perfect anthers, though the flowers are nearly filled with petals: at any rate, the more double the flowers are from which the pollen is procured, the more chance there will be of obtaining fine-flowering seedlings. The head of the carpella [the cluster of pointals] must be fully expanded, and a little glutinous matter have been secreted upon the stigmas before they will be fit to receive the pollen: if the pollen be applied to them before, it will be of no use, as they are not far enough advanced to receive it; that is the reason why numerous plants cultivated in this country never produce any seeds, the anthers being all dropped from the flower, before the stigma is far enough advanced to receive fertilisation. This accounts for the numerous hybrid productions in the *G*eraniàceæ, where the anthers have generally dropped off a day before the stigmas are sufficiently advanced to receive impregnation: the stigmas are then as likely, if impregnated or set at all, to be so from the pollen of a different species, as from that of their own. This is also the case with numerous other plants in botanic gardens, where numerous natural mules spring up annually, particularly in *Verónica*, *A*conìtum, *D*elphínium, *S*ýmphytum, and many other genera.

"In the next place, it is said, the seedlings all bear greatest resemblance in colour of flower to the mother plant: this I have generally found the reverse in Pelargònium, Amarýll*is*, and several other genera, the male parent being generally most conspicuous in the mules; but the darkest colour, whether in male or female, generally predominates: for instance, if a fine yellow ranunculus was fertilised by a black one, I should expect to find it produce bright crimson; a scarlet with a white would bring various shades of rose; one of the yellow-flowered tuberous-rooted pelargoniums, fertilised by a black one, brings either scarlet or crimson. To obtain fine new varieties of ranunculus in colour, I would recommend the yellow to be fertilised by black, the scarlet or crimson with white and yellow, and all the most distant intermixtures: this would be the way to get fine and distinct varieties, and would be the means of introducing a new set of splendid sorts."

Orpheus Rose. One of the first-rate roses, well deserving a place in every collection; drawn in the nursery of Messrs. Whitley and Co., Fulham, where were several fine plants of it in full flower at the same time, that had been budded on common stocks at standard height. Flower, a good size, and very double, of a fine red purple, and becoming darker afterwards. — Wakefield's Paul Pry Carnation. Highly coloured. A crimson bizarre. Flower large, very double, and handsomely variegated: petals broad, and broadly ovate, rounded at the ends, spreading, of a pure white, lined and variegated with a brilliant crimson and dark purple; outer ones much the broadest, becoming gradually narrower and smaller inwards. *7s. 6d.* the pair in Mr. Hogg's priced list for 1830.

Wallich, N., M.D. and P.H.D. F.R.S., &c. &c., Superintendent of the Honourable East India Company's Botanic Garden at Calcutta: Plántæ Asiáticæ Rariòres; or, Descriptions and Figures of a select Number of unpublished East India Plants. London, 1829. Fol. In Parts. *2l.* 10*s.* each.

Plants included in the first edition of the *Hórtus Británnicus* have a dagger (†) prefixed; those in the country, but not in that work, a star (*); the rest are not in the country.

The present work consists of a selection of plants made chiefly from a series of 1200 drawings, executed under Dr. Wallich's direction, by Indian artists, at the Calcutta garden, and on his various journeys. It is surpassingly well executed, and remarkably cheap.

No. I. contains

1 to 25. — Amhérst*ia* (Countess Amherst) nóbilis; Leguminòsæ *C*ássiæ. A magnificent tree, from the river Saluen, which attains about the height of 40 ft. When in flower it is "profusely ornamented with pendulous racemes of large vermilion-coloured blossoms, forming superb objects, unequalled in the flora of the East Indies;" and, Dr. Wallich presumes, "not surpassed in magnificence and elegance in any part of the world. The ground was strewed, even at a distance, with its blossoms, which are carried daily as offerings to the images in the adjoining caves. There can be no question that this tree, when in full foliage and blossom, is the most strikingly superb object which can possibly be imagined." Dr. Wallich succeeded in obtaining some plants for the botanic garden at Calcutta, and two of these he attempted to bring with him to England, but they perished on the passage. He saw but one pod on the only two or three trees which he ever beheld, and that contained imperfect seeds. — Sterculia *po*pulifòlia. Handsome and curious. — *H*ibíscus *Lindlèy*i*. Very handsome, with deep purple flowers. "Like most of the members of the extensive genus to which it belongs, it abounds in strong and woody fibres. All its green parts have an agreeably acid taste." — Anneslè*a* fràgrans; Ternstrœm*iàceæ*. An elegant tree, with delightfully fragrant flowers. — *Ph*àsèolus fúscus. A very elegant climber; annual, and much branched. — *Carallùma* (a genus nearly allied to Stapèl*ia*) *crenulàta, *Carallùma* *fimbriàta. Curious. — *Curcùma* Roscoe*àna*. "An extremely beautiful and splendid plant, and certainly one of the most ornamental of the whole genus." — *Curcùma* cordàta. A large and stately species, having all its green parts beset by long silky hairs. — Melanorrhœ'a usitàta; *T*erebinthàceæ Anacárdiæ. A very interesting tree, as furnishing the varnish most extensively used in the east of China and in the Birman empire. "Every part of it abounds in a thick and viscid greyish brown fluid, which turns black soon after coming in contact with the external air. . . . It is a curious fact, that, to my certain knowledge, the natives of the countries where the tree is indigenous never experience any injurious consequences from handling its juices: it is strangers only that are sometimes affected by it, especially Europeans." This drug is also employed as a size or glue in the process of gilding; "nothing more being required than to besmear the surface thinly with the varnish, and then immediately to apply the gold leaf. The beautiful Pali writing of the religious order of the Burmas on ivory, palm leaves, or metal, is entirely done with this varnish, in its native and pure state. Introduced to Kew by Dr. Wallich. — Hiræ'*a* (J. N. de la Hire, a French physician) hirsùta; Malpighi*àceæ*. An extensive climber, covered with long rust-coloured hairs. — Cardiospérmum *canéscens. — Abèl*ia* (Dr. Abel, who went to China with Lord Amherst) triflòra; *C*aprifòliàceæ. An elegant middle-sized tree, with delightfully fragrant flowers, like those of *J*asmìnum revolùtum. — Matón*ia* (Dr. Maton, V.P.L.S., &c.) pectinàta; *P*olypodiàceæ. A most beautiful fern, discovered towards the summit of a very lofty mountain, at the height of 4000 ft. — Comètes suratténsis; *A*maranthàceæ. — Comètes abyssínica. — Impàtiens reticulàta. — *C*lématis subpeltàta. A very handsome climber, with broad cordate leaves, closely allied to *C*lématis smilacifòlia. — Eránthemum cinnabárinum. A charming shrub, varying in height to 6 ft., with large flowers of a vivid red colour. — Dillèni*a* scabrélla. A deciduous tree of very slow growth. "At the time of flowering it is entirely destitute of leaves, instead of which it is covered by countless numbers of elegant and fragrant yellow blossoms, which last, however, only a few weeks, and are soon succeeded by a plentiful crop of small, round, orange-coloured fruits. The fleshy leaves of the calyx, which cover these, have a pleasantly acid taste, and are used

in curries by the inhabitants of Chittagong (of which district of Bengal the tree is a native), in the same manner as those of Dillèni*a* speciòsa (Chalta of the Bengalese). The tree is in full foliage during the rainy season." — Dillèni*a* ornàta. A noble tree, sometimes mistaken for the teak, to which it bears some resemblance in foliage. The flowers are large, fragrant, and produced in great abundance. — Gastrochìlus (labellum ventricose) *pulchérrimus; Scitamíneæ. Intermediate between Alpíni*a* and Kæmpfèri*a*. Flowers very beautiful, delicate in texture, and pale yellow. — Gastrochìlus longiflòrus.

No. II. contains

26 to 50. — *Urèna* *speciòsa; *M*alvàceæ. A very charming plant, varying much in the form of its leaves, and with beautiful pink-coloured flowers; the corolla is nearly 2 in. long, and is by far the largest of the genus, which has in general small and inconspicuous flowers. — Kæmpfèri*a* *élegans; Scitamíneæ. — Justíci*a* *guttàta. — Dendròbium ámplum; *O*rchídeæ; and one of the most beautiful of the genus to which it belongs. " For the specific character and observation given I am indebted to my inestimable friend Professor Lindley, who has undertaken, and in a great measure accomplished, the elaboration of the families of *O*rchídeæ, *R*osàceæ, and Amentàceæ, in my possession; and from whom I have, besides, derived constant and important aid in the prosecution of this publication, in the arrangement of the herbaria placed by the Honourable East India Company under my charge, and in the distribution of their duplicates. Many years, indeed, before I left India, have I benefited by Mr. Lindley's generosity and kindness, to a degree which has placed me under the most lasting obligations. I have long been desirous of an opportunity, and I seize the present one with great satisfaction, of expressing publicly the sincere respect and gratitude which I entertain towards that eminent and highly accomplished botanist." — Podocárpus *latifòlius; Coníferæ. A middling-sized tree, found on the lofty range of mountains bordering on the eastern parts of Bengal. " It is probable that the juicy receptacles are eaten, like those of the kindred species." — Ruélli*a* alàta. One of the most charming species of the genus. — Knóxi*a* *p*lantagínea. — Aphanochìlus (*aphanēs*, obscure, *cheilos*, lip) polystàchyus; Labiàtæ. — A. flàvus. In this part of the work a synoptical account of the Indian Labiàtæ enumerated in Dr. Wallich's *Catalogue of Dried Specimens* is given, for which, Dr. Wallich says, " I am indebted to my esteemed friend Mr. George Bentham, to whom I am under very great obligations, both for this important addition to my work, and for the valuable assistance he has afforded me in my labours connected with the herbaria under my charge." — Líparis lóngipes; *O*rchídeæ — *Æ*rìca paniculàta; *O*rchídeæ. — *Uràri*a cordifòlia. — Cœlógyne Gardneri*àna;* *O*rchídeæ. — Dendròbium *formòsum; *O*rchídeæ. — Dendròbium densiflòrum. — *A*conìtum fèrox *Wall.* The *A*conìtum viròsum of *Don. Prodr. Flor. Nepal.* Found in Nepal Proper, at an elevation of about 10,000 ft., and varying exceedingly, according to its habitat. " There are three other species of aconite or monk's-hood, all of them tuberous-rooted, which inhabit the southern side of the Himalaya, and are considered by the natives as strong poisons. Our species, however, exceeds them all in virulence, and is probably the most deleterious vegetable poison of continental India. This dreadful root, of which large quantities are annually imported, is equally fatal when taken into the stomach or applied to wounds, and is in universal use in poisoning arrows, and, there is too much reason to suspect, for the worst purposes."

Mr. J. Pereira, of the General Dispensary in Aldersgate Street, London, gave Dr. Wallich the " subjoined detail of several interesting experiments made to determine the physiological effects of the roots of the *A*conìtum fèrox. They fully establish the extreme virulence of the poison. These experiments were made in the presence of Dr. Falconer, assistant-surgeon to the Bengal establishment, and my brother, on rabbits and dogs, and with the root in the form of powder, spirituous extract, and watery extract. Of these preparations the spirituous extract is by far the most powerful. The effects were tried by introducing this extract into the jugular vein, by placing it in the cavity of the peritoneum, by applying it to the cellular tissue of the back, and by introducing it into the stomach. In all these cases, except the last, the effects were very similar; namely, difficulty of breathing, weakness, and subsequently paralysis, which generally commenced in the posterior extremities, vertigoes, convulsions, dilatation of the pupil, and death, apparently from asphyxia. The bodies of most of the animals were examined immediately after death. In all cases the right side of the heart was found distended with dark-coloured blood, and the left empty. In one or two cases the auricles were still contracting, but the ventricles had ceased to contract. The galvanic apparatus produced a quivering in a few of the fibres of the ventricles, and either produced, or very much increased, the contractions of the ventricles. All the voluntary muscles were susceptible of galvanism. One grain of the alcoholic extract introduced into the cavity of the peritoneum of a rabbit began to produce its effects in two minutes; death took place in nine minutes and a half. In a second experiment of a similar kind, the effects commenced in two minutes and a half, and death was produced in eleven minutes. Two grains introduced into the jugular vein of a good-sized strong dog produced convulsions in one minute, and death in three minutes. One grain introduced into the cellular tissue of the back of a rabbit began to affect the system at the end of six minutes, and produced death in fifteen minutes. A rabbit was made to swallow three grains of the extract. No effect was produced, except that the animal continued chewing for several hours, as if ruminating, and which arose probably from the local action of the poison on the mouth and throat. The watery is less powerful than the spirituous extract. Two grains of it introduced into the peritoneum of a rabbit did not produce death until the expiration of twenty-seven minutes.

" It appears that the root of this plant is imported in very considerable quantity into the plains, where it is sold at the rate of one rupee per seer (about 1*s*. the pound), although the sale of it seems to have been prohibited under the native governments, on pain of heavy penalties, except to persons well known, or by authority. It is also used in cases of chronic rheumatism by the native practitioners. The coincidence in opinion respecting its efficacy in such cases, between them and Professor Stoerk of Vienna, who applied the extract of the roots of some of the European species to similar purposes, may perhaps add to the evidence respecting its utility."

Ruéll*ia* gossýpina. — *C*onvólvulus atro-purpùreus. " A very large shrub; and I am scarcely acquainted with any species which would be more desirable, as an ornament, either to a garden or a hot-house." —*Abelmóschus* *crinìtus. Approaches to *H*ibíscus racemòsus. — Centranthèra híspida; Labiàtæ. — *Q*uércus spicàta. " This is one of the largest, as well as the commonest, sorts in Nepal, where it attains the most gigantic size. The wood is exceedingly like the English oak in colour, and most probably equals it in other respects, but the mountaineers do not esteem it much, owing, as they say, to its speedy decay; a circumstance owing, no doubt, to their employing it in its green state. A similar prejudice prevails in that country against the other species." — *Mucùna* macrocárpa; Leguminòsæ. " This superb climber approaches closely to the *Mucùna* giganteà *Decand.*, but differs in the size of its flowers and fruit, as well as in other respects. It is furnished to a less degree than most of the other species belonging to the genus, with those long and easily separable hairs, which on the slightest touch enter the skin, and cause an intolerable burning. The flowers, especially the calyces, are, in this respect, the most offensive parts; but this is abundantly counterbalanced by their size and beauty." — Sphærópteris barbàta; Polypodiàceæ.

No. III. contains

51 to 75. — Echìtes rhynchospérma. An exceedingly handsome climber, and certainly the most ornamental of the genus to which it belongs. — *Chírita* (founded by Dr. Hamilton on a "fictitious native name") grandiflòra; Didymocárpeæ. — Hibíscus †macrophýllus. A fine tree, from the bark of which ropes are made, as they might probably be from the bark of all the Malvàceæ. — Allantòdia Brun*oniàna*. A singular and beautiful fern, growing in the dense forest of oaks and rhododendrums on Sheopore. — Cœlógyne maculàta; Orchídeæ. "In the Calcutta garden our mode of treating these and similar epiphytes is to place them on beds made of brickwork, raised 4 or 5 ft. from the ground, containing a rich mould, mixed with a large proportion of pebbles, and resting on a stratum of large stones or masses of vitrified bricks, so as to admit of being perfectly drained. The surface is covered with moss, and the whole structure is placed in a shady and sheltered situation, corresponding to the natural place of growth of such plants. By the aid of these beds, and by a constant attention to the necessity of keeping the roots, as well as the plants themselves, moderately moist, I have succeeded in cases even where there was but little hope; for instance, with plants from the higher region of Nepal, and even from Gossain Than in the Himalaya." Cœlógyne Wallich*iàna*. — Zíngiber barbàtum. — Kæmpfè*ria* cándida. — *Curcùma* *parviflòra. — Amòmum corynostàchyum. — Stercùlia versícolor. — Tephròsia coccínea; Leguminòsæ. — Vibúrnum fœ'tidum. — Cyrtótropis (*kyrtos*, curved, *tropis*, a keel; shape of carina) córnea; Leguminòsæ Phaseòleæ. — Phasèolus rostràtus. Comes near to the *P.* alàtus *Lin.* According to Dr. Roxburgh's MS., the lower part of the plant is perennial. — Eriolæ'na *Candóllii; Malvàceæ. — Boót*tia* (Francis Boott, M.D. an American botanist) cordàta; Hydrocharídeæ. "One of the most charming water plants with which I am acquainted. All the green parts are eaten by the Burmese as potherbs; for which purpose they are collected in great quantities, and carried to the market at Ava, in the vicinity of which capital the plant is found in ponds, flowering profusely in the month of September." — Justí*cia* *venùsta. "One of the loveliest species with which I am acquainted. The flowers are tubular, and of a deep purple colour, contrasting in a very striking manner with the dark green and large foliage. I had the satisfaction of bringing a growing plant to England in 1828, which was presented by the East India Company to the Horticultural Society of London, in whose rich garden at Chiswick it has lately blossomed." — Cirrhopétalum Wallíchii; Orchídeæ. — Otochìlus fúscus; Orchídeæ. — Bolbophýllum cylindràceum; Orchídeæ. — Trìas oblónga; Orchídeæ. — Æschynánthus ramosíssima; Labiàtæ. — *Chírita* macrophýlla; Labiàtæ. — Ceropègia longifòlia; Labiàtæ. — Roýl*ea* élegans; Labiàtæ. "I have sincere satisfaction in dedicating this new genus to my valued friend, Mr. Royle, whose claims as an excellent botanist fully entitle him to that compliment. How eminently the garden at Saharunpur has benefited under his charge, is manifest by the numerous improvements and additions to its riches which it owes to his indefatigable zeal and talents, and which are well known to the government of Bengal, as well as to all who have visited the western provinces of Hindustan. But, independently of having the care of this most useful establishment, he is likewise the founder of a nursery for medicinal and alpine plants generally, on the Chaor mountain of Sirmore, which has already proved of the greatest service. It is not, however, botany alone to which he has devoted his talents; there is not a branch of natural *history* in which he has not acquired a high degree of proficiency. To pur-

suits of this nature he is devoting every moment of leisure which his extensive professional duties afford him, with a degree of ardour and success which is far beyond my feeble praise, and which must soon place his name high among naturalists."

No. IV. contains

76 to 100. — Argyreìa festìva. A superb shrub, sent from China to the botanic garden at Calcutta. — Melhània Hamilton*iàna*. — *Pongàmia* atropurpùrea; Leguminòsæ. "This very stately tree constitutes a large portion of the dense forests on the shores of Martaban and Tenasserim. I found it growing in great abundance at Amherst and Moalmyne, and on the sea-sides towards the river called Chappedong. Nothing can be imagined more beautiful than the crown of the tree, when thickly covered with its dense panicles of deep purple flowers. The wood is much esteemed by the Burmese and Taleyn people, who employ it for beams and rafters in their houses. I was told that they eat the tender leaves."

Bómbax insígne. Smaller than the common cotton tree of India. — Wìght*ia* (Richard Wight, a zealous cultivator of East Indian natural history, especially botany) gigantèa; Bignon*iàceæ*. An arborescent climber, attaining a very gigantic size, overtopping trees of considerable height, and nearly overwhelming them with its numerous branches. — Barlèr*ia* polýtricha. Ornamental, with large lilac flowers. — Ruéll*ia* Nees*iàna*. A charming species. — Apostàsia (*apostasis*, defection; third stamen abortive) Wallích*ii*. A species of a very remarkable genus, most nearly related to Orchídeæ. — A. nùda. — *Í*ris decòra. "This plant and *Í*ris nepalénsis (*Bot. Reg.*, 818.) are the only two species of *Í*ris which I have found in Nepal, and they are quite distinct from the European species. — *Có*rylus fèrox. The nut is small, but like the common nut in taste. "This is one of the commonest as well as most elegant plants of the tribe of Melastomàceæ inhabiting Nèpal, where it grows on almost all the hills surrounding the great valley, delighting in shady and moist situations, and producing its numerous large and red panicles during the rainy season."

Myrística sphærocárpia and *a*mygdálina. — *P*íper *ribesio*ìdes. A gigantic species of pepper. — Justíc*ia* palatífera and ventricòsa. — Desmòdium péndulum; Leguminòsæ. Bignòn*ia* multíjuga. — Begòn*ia* pedunculòsa. — *C*lématis gràta. — Thomsòn*ia* (in honour of Professor Anthony Todd Thomson, M.D., and not to be confounded with Thompsòn*ia*, belonging to the family of Passiflòreæ, which Mr. Brown named in honour of John Vaughan Thompson, Esq., surgeon to the forces, author of *Zoological Researches*, &c., now, however, Deidamìa Thompson*iàna*) nepalénsis; *A*röídeæ. A singular and handsome plant. — *P*olýgala arillàta.

This number completes the volume, and contains the title, preface, &c. From the latter we give the following very interesting extract. Dr. Channing has well remarked, that cooperation is a characteristic of the present age. Dr. Wallich states, that having, in 1828, obtained permission to leave for a time the duties of his situation as superintendent of the Calcutta Garden, and to take his collections with him, in order to present them in person to the Court of Directors of the East India Company, "that enlightened body, with a munificence never equalled, and which has already been appreciated and gratefully acknowledged, not only in this country but throughout Europe, immediately directed me to proceed to the distribution of the duplicates among the principal public and private museums in Europe and America. They were pleased to order a similar distribution of the herbariums of continental Indian plants in their museum, made by Drs. Patrick Russell, Roxburgh, and Hamilton, the Tranquebar missionaries, the late Mr. Finlayson, Mr. Wight, and myself. The assistance which I have already received, in the laborious details connected with the above distributions, has placed me under the greatest obligations to some of the most eminent botanists of Europe. I have been honoured by the personal aid of Mr. Brown, Professors Kunth, Hooker, Graham, and Lindley, M. Alphonse Decandolle, Mr. Arnott, Mr. Prescott, and Mr. Bentham.

"Besides the homage which has been paid to the Company in many publications, for their princely liberality in thus affording these ample means for the diffusion of a knowledge of the botany of the East Indies, a still more effectual method of testifying a sense of the general obligation they have conferred upon the scientific world has been adopted by a number of celebrated botanists, who have undertaken to publish monographs of the more extensive and interesting families, thereby powerfully contributing to the completion of a scheme so truly worthy of the British East India Company.

"It is a source of pride for me to introduce here the names and separate labours of those who have thus zealously come forward to advance the interests of science. Mr. Arnott has undertaken the publication of the families of Ranunculàceæ, Nymphæàceæ, Papaveràceæ, Droseràceæ, Aceríneæ, Tamariscíneæ. Mr. Bentham: Caryophýlleæ, Labiàtæ, Líneæ, Melastomàceæ, Memecýleæ, *Alangièæ*, Onagrarièæ, Salicarièæ, Scrophulárinæ, Orobanchèæ. Professor Besser of Crzmieniec: Artemísia. M. Adolphe Brongniart of Paris: Celastríneæ, Rhámneæ. Mr. Brown: *Anonàceæ*, Capparídeæ, Rubiàceæ, Gramíneæ. M. Cambesedes of Paris: Hippocratíceæ, Sapindàceæ, Ternstrœmiàceæ. Professor Choisy of Geneva: Guttíferæ, Hypericíneæ, Convolvulàceæ. Professor Decandolle of Geneva: Araliàceæ, Umbellíferæ, Saxifràgeæ, Cunoniàceæ, Caprifoliàceæ, Loránthеæ, *Valeriàneæ*, Dipsàceæ, Compósitæ, Polemoniàceæ, Ebenàceæ, *Sapòteæ*, Styracíneæ, Sesàmeæ, Gentiàneæ, Aristolochièæ. M. Alphonse Decandolle of Geneva (Flòra Burmánica): Campanulàceæ, Bignoniàceæ, Myrsíneæ, Urtíceæ. M. Duvau of Paris: Pediculàris, *Verónica*. Professor Graham: Leguminòsæ. Dr. Greville: A'lgæ, Fílices. Mr. Haworth: Crassulàceæ. Professor Hooker: Myristíceæ, Fílices, Músci. Professor Adr. Jussieu of Paris: Tiliàceæ, Malpighiàceæ, Rutàceæ, Meliàceæ. Professor Kunth of Berlin: Bombàceæ, Büttneriàceæ, Sterculiàceæ, Dombeyàceæ, Malvàceæ, Elæocárpeæ, Terebinthàceæ, Combretàceæ, Verbenàceæ. Mr. Lambert: Coníferæ. Professor Lehmann of Hamburgh: Potentílla, Boragíneæ, Primulàceæ. Prof. Lindley: Rosàceæ, Amentàceæ, Orchídeæ. Prof. von Martius of Munich: Amaranthàceæ, Pálmæ, Restiàceæ. Prof. Meisner of Bâle: Begoniàceæ, Polygòneæ. Prof. Nees von Esenbeck of Breslau: Acanthàceæ, Solanàceæ, Lauríneæ. Mr. Prescott: Cyperàceæ. Prof. Richard of Paris: Menispérmeæ, Myrtàceæ, Asphodèleæ, Smilàceæ. Prof. Rœper of Bâle: Euphorbiàceæ. M. Seringe of Geneva: Sàlix. Prof. Schultes of Landshut: Various miscellaneous genera. Prof. Sprengel of Halle: *Berberídeæ*, Crucíferæ, Polygàleæ, Eríceæ, Apocýneæ, Asclepiàdeæ.

"On the above cooperation, exhibiting an unparalleled instance of zeal and liberality in the promotion of a common cause, I can offer no comment; nor can I adequately express the gratitude which I feel towards those who have thus generously relieved me from some of the most difficult parts of my labour." (*Pref.*, p. ix. and x.)

Brown, Robert, Esq., F.R.S., V.P.L.S., &c. &c. Supplementum Primum Prodromi Floræ Novæ Hollandiæ, &c. A First Supplement to the Plants of New Holland; containing the new Proteàceæ discovered by Baxter, Caley, Cunningham, Fraser, and Sieber. The Characters drawn up from dried Specimens. Lond. 1830. 8vo, pp. 40.

The last importation of seeds from New Holland was by Mr. Baxter, and they were purchased chiefly by Mr. Knight of the Exotic Nursery, King's Road; they have come up very well, and the plants are now potted off, and in a thriving state.

Anon. a list of noblemen and gentlemen given as contributors: Baxter's Library of Agricultural and Horticultural Knowledge, &c. Lewes, 1831. 8vo. 1*l.* 12*s.*

Loudon's Encyclopædia of Agriculture, &c. 2d edit. with considerable Improvements, and nearly 500 new Engravings. London, 1831. 8vo. 2*l.* Both the above works will be further noticed in our next.

Anon.: An Account of the different Floral and Horticultural Exhibitions held in Lancashire, Cheshire, Yorkshire, and other Parts of the Kingdom, in the Year 1830.

There have been, for a number of years past, what are called a *Flower Book* and a *Gooseberry Book* published at Manchester: the above is the flower book, and it contains a very distinct account of the flower shows, and also of shows in which fruits and culinary vegetables have been exhibited in the counties mentioned, and in some others. We sincerely wish that the editor of the work would in future contrive to include all the counties of both kingdoms, so as to save us the space occupied by our article *Provincial Horticultural Societies.*

An interesting question for consideration is, whether, as the classes that now exhibit at these shows acquire a little more scientific knowledge of plants, they will still continue to cultivate varieties, and to delight in such monstrosities as the Lancashire gooseberries? We think not: because, though much more skill in manipulation is required to grow varieties so far removed from a state of nature than to grow species, yet the preference of the latter argues more mind. The constant attention and great nicety required to bring florists' flowers to perfection are excellent things for engrossing the whole of the leisure time of a labourer or a tradesman of very limited reading, and filling it up in an innocent manner: but, as this labourer or tradesman becomes more generally enlightened, his taste will take a wider range, and he will not only desire to know something of other plants besides florists' flowers, but to study other subjects besides botany and gardening; to engage in other pursuits, and to possess other things. Natural history will then begin to attract his attention; and, as no part of the animal creation is so immediately connected with vegetable culture as insects, one of his next studies will be entomology. On comparing the flower book with the same work as published ten years ago, it will be found that the number of herbaceous plants and green-house shrubs has very much increased; and this we consider to be so far indicative of the progress of scientific taste as to warrant our expectations. The botanical and entomological societies which are established by the working manufacturers in different parts of Lancashire, of some of which we have given notices (Vol. VI. p. 392.), afford further proofs of this progress, which will increase with the increase of education. In the mean time, books like that before us, and our own accounts of the transactions of provincial societies, not only afford harmless gratification to the individuals who have obtained prizes, but they inform other candidates of the most desirable plants or fruits with which to compete at future shows or to ornament their gardens. Both are aids in our progress onwards.

Doyle, Martin, Author of "Hints to Small Farmers," "Irish Cottagers," &c.: 1. Hints to small Holders, on Planting and on Cattle, &c. &c. Dublin, 1830. 12mo. 1*s.*

A useful little tract to the young who can read, and whose minds are not prejudiced, like those of their fathers, against all innovation.

2. Hints addressed to the Small Holders and Peasantry of Ireland, on Road-making, and on Ventilation, &c. &c. Dublin, 1820. 12mo. 1*s.*

This is another valuable little work. The article *on the importance of pure air* ought to be read, and, if possible, understood and acted on, by every master and mistress of a family. Very few indeed, even of those who are classed amongst the respectable part of society, are aware of the injury which the health sustains by breathing in an atmosphere which has been deprived of part of its oxygen, either by our own respiration or that of other persons, or by the burning of candles or lamps. If the middling classes about London understood the subject, would they be content to rent houses with such low ceilings, especially to the bed-rooms, as we see rearing up every where round the metropolis? Unquestionably not: they would refuse to occupy such houses, and the builders would be obliged to alter their proportions in building them.

"Since air is passing through our lungs every moment of our existence, it is of immense importance to have it pure. The young and healthy may not quickly perceive the changes or impurities of the atmosphere they breathe; but the delicate, the sickly, and the aged are powerfully influenced by its qualities. From the interesting and satisfactory experiments which learned men have made, it has been proved that the lungs of a full-grown man contain, on an average, five quarts of air; he draws in and breathes out a seventh part of this quantity at every breathing. If he draws in and lets out breath twenty times in a minute, a quantity of air which would weigh 53 lbs. would pass through his lungs in twenty-four hours. Farther, the atmosphere is composed of certain *fluids* or *gases*, of which one, called *oxygen*, which is indispensable to animal life, forms a fifth part, and the other four parts are more or less pernicious. Again, in the process of passing through the lungs, this *oxygen*, this pure part, becomes consumed or withdrawn from the atmosphere in a considerable degree, leaving the air more and more free from it at every breathing, until it becomes pernicious in the extreme; for the change in the *quality* of the air is more than merely withdrawing the oxygen; the place of this pure portion is supplied by what is commonly called *fixed air*, which is fatal to life. Thus does the process of breathing not only take from the atmosphere the portion of it on which life depends, but actually renders it poisonous. To admit fresh air continually is therefore very necessary; and of this, for healthful respiration, a man requires *three gallons each minute*." (p. 25.)

In speaking of the state of ventilation in Irish farm-houses and cottages, Mr. Doyle says: — "It frequently happens that the family of a small holder or labourer is so poor as to have only the means of building one wretched little bed-room, perhaps 8 or 10 ft. square. In this the father and mother, and half a dozen children, and occasionally a cousin or two, are obliged to lie. Now, there is no matter (not absolutely poisonous) more prejudicial to health than that which arises from the human body; I mean, through the pores of the skin, as well as from the breath; and in this case I am supposing eight or ten persons to pass seven or eight hours in a room barely large enough to hold them when packed closely in bed. Well, the air, on account of the heat which it has acquired in passing through the lungs of this family party, stretched higgledy-piggledy on their straw, becomes lighter than the surrounding air, and rises to the ceiling: no outlet being there for its escape, it remains till it becomes cool, when it will descend. Up goes another and another whiff of heated and rarefied air at every breathing, which in turns fall down again; and in the circuit which it thus takes, the same air passes through the lungs of all the persons in the bed, who take in at each breathing a new portion of impure matter, and loses every time that it is drawn in an additional portion of its life-sustaining principle. If the inside door be open, the quantity of cool air will certainly for some time prevent any perception of the tainted nature of the air within, but after a time all this will be exhausted. The discharge from the surface of the human body (even though soap and water be regularly used, and you well know this would be supposing too much), in perspiration alone, is equal to nearly 2 lbs. weight per day. Much of this matter is certainly nothing but water; but there is animal matter of an oily nature in it too, as appears from the stains which it leaves upon linen, extremely offensive to the smell. By it the dog is enabled to trace out his master; and some persons are in such high odour as to be more agreeable a few paces off than very close. Now conceive all this exhaling from the bodies of so many sleeping persons, their pores all open, and no mode of carrying off the foul air, and you will admit, from what has been already said on the subject of air, that this sleeping family is in great want of a free circulation of it. .... So much to show the importance of fresh air; but how are you to obtain it in your contracted and crowded sleeping-rooms? By the following simple plan, recommended by Dr. Meyler: — Put a tube, or make some kind of opening, in your ceiling, to let out the tainted air, and let there be at the same time a free admission of air from below, either through the door or a tube at the bottom of the room, conducted to the outside and turned downwards. Thus one tube will bring in the fresh and the other will take out the foul air. This, surely, is a simple plan for promoting health. The windows also should be open by day, and always as high up as possible, particularly where there is no ventilator; yet not one in twenty cabins in many parts of Ireland has a window in the sleeping-room, and if it has, that window is nailed so that it cannot open; such a one, or a pane of glass built into the wall, will admit light, it it true, but it should admit and let out air also. The putridity of the air is increased too, in many cases, by a stagnant pool of water and a dunghill at the very cabin door."

We have quoted these passages, because we are convinced that many gardeners are not so fully aware of the importance of this subject as they ought to be; nor do we think it would be venturing too far, to state that some of the employers of gardeners may not be much better informed on the subject than their servants. It is evident from this tract that Mr. Doyle, who, from his own description of his bed, must be, if not an independent gentleman, at least what in England is called respectable, arrived at his knowledge of the importance of air by accident. "For a month or two after I was married," he says, "my wife and I were regularly tucked and pinned up in bed under a close covering of thick damask curtains by an old servant maid, who, I suppose, thought that we should have taken cold without them. The weather at that time was severe; and as the bedstead was high, and the bed pretty large, we did not feel the want of more air than the crevices of the curtains (in spite of Molly's precautions) were allowed to admit; but after a month or two the air became warmer, and, of course, more rarefied, and Mrs. Doyle, moreover, commenced a course of curtain lectures, which very few men are well disposed to hear, particularly if they deserve them. Then I began by degrees to open the curtains, in order to let the whole room have the benefit of Mrs. Doyle's orations, and to cool the fidgets which the heat and the lecture together used to excite in me. The air which I received in exchange used to relieve me wonderfully, and from that time to this (Doctor Meyler's book having enlightened my wife as well as myself) we have never had the curtains drawn either in winter or summer. The consequence has been, cool refreshing sleep, instead of feverish and laboured breathing in bed, and lassitude in the morning, the usual effects of confined and impure air." (p. 28.)

The succeeding article is on fevers; recommending the necessity of keeping dunghills, and all similar matters which are liable to send out powerful effluvia, at a distance from dwellings. A few rules for preserving health succeed; in which cautions are given against dampness, and clearing the stomach by vomiting and the bowels by purgatives recommended on the first suspicion of fever, colds, or coughs of any kind. Wooden shoes, or soles made of wood an inch thick, which can be fastened under the leather soles by straps over the foot, are recommended to labourers while working or standing on damp ground. The observations on dress, manners, and morals are good, as far as they go; and the same may be said of those on education. It will readily be conceived that on this last subject we think Mr. Doyle does not go half far enough.

He appears to belong to that class who imagine that the more a man knows the less he will be inclined to work, and that a certain species of humbug must always be practised towards those who are to get their bread by the sweat of their brow. Perhaps it would have been too much to have expected him to be of a different opinion.

We are thankful that he has gone so far, and we can not only most warmly and conscientiously recommend his little work to every Irishman who can afford to purchase it, and to Irish landlords to give away to their tenants; but we can state, without fear of contradiction, that, so far as ventilation is concerned, the labouring classes of England are as much in want of such a publication as those of Ireland.

Anon.: Report of the Committee appointed to carry into effect a Plan for ameliorating the Condition of the Poor at Saffron-Waldon, in the County of Essex, and some Account of the Cottage Allotments in the adjoining Parish of Littlebury. Pamph. 8vo. 1830.

This tract, which does not appear to be sold, affords another proof of the successful application of the palliative system, for such, after all, is the plan of allotting land to labourers, and directing them in its culture. In a healthy state of society it could never become necessary for one class to take upon them the care of the other; and, until the poor can be supplied with knowledge to such an extent as to enable them to take care of themselves, they will go on much in the same manner as they always have done, on the verge of want and misery. Let it not be thought, from these remarks, that we do not approve of palliatives; they are better than nothing for the existing generation, and probably they may lead to something; we trust to education, for that which rises to succeed them. What a wretched state the occupiers of these allotments must be in, when it is necessary to fetter them with no fewer than nine conditions of holding and culture; of which one is, " not to plant potatoes unless the ground be first properly manured;" and another, " that any individual guilty of theft or other misdemeanour will be subject to an immediate ejectment, without the slightest remuneration for labour or planting!" Men will not be drilled either into being good cultivators or good citizens by main force.

Laurence, Charles, Esq., of Cirencester, brother to the celebrated surgeon of that name, of Whitehall Place, London: Practical Directions for the Cultivation and General Management of Cottage Gardens, with Plans for laying them out for Five Years; also, Hints on Keeping Pigs, on Services, &c. Cirencester, 1831. 8vo, pp. 32.

This little tract is limited to what it pretends to be, " Practical Directions," or, as the author emphatically expresses it, directions " intelligible to those who lack intelligence;" and as it does not contain a single word of political economy, and approves of going regularly to church, we do not think there is a single individual in the country who could seriously object to it. As a tract to give away, it is much more suitable than our own *Manual,* because lower in the scale, and consequently more easy of comprehension. We have only one little objection to make to it, and that is, we disapprove of what the author calls " frequent superintendence." We say, let the poor man have the ground, and Mr. Laurence's pamphlet; furnish him now and then with a few seeds and plants, if you please; honour him also with a premium once or twice a year, if you feel disposed; but leave him independent "to do what he will with his own;" and let him, at least, feel himself master within the four corners of his little garden.

A friend of the author put Mr. L.'s pamphlet into his gardener's hands, who offers, on this head, very sensible advice; advice which we know to be acted on in some parts of Scotland, and which several of our correspondents, among others Mr. Buchan, have shown to be followed upon some gentlemen's estates in England and Wales. We request our readers will turn to an article on this subject (Vol. I. p. 275.), as it not only applies to the case before us, but also to the efforts now making, by Sir Eardley Wilmot and others, in Warwickshire, as we have stated in p. 224., and in the *Morning Chronicle*, Jan. 1831.

The gardener of Mr. Laurence's friend advises the inspection of the cottager's gardens by a good practical gardener, a few times in the season, who should supply them with such plants and advice as he saw they wanted. He recommends "Sunday morning as a good time, because it is the only leisure time an industrious labourer has in the whole week." The gardener, being on a level with the cottagers, would never be felt as an intruder on their independence. We recommend this sort of assistance to all the employers of gardeners, and to all gardeners who have any thing in their power.

Mr. Laurence has very liberally authorised his printer, P. Watkins, Cirencester, to supply any gentleman who may apply to him with copies of his pamphlet at the actual cost; and we have recommended Mr. Charlwood to send for a hundred, which he has done, and says he can afford to sell them at 6*d*. each. Mr. Charlwood can also supply the very excellent pamphlet of Mr. Denson on the same subject, entitled *A Peasant's Voice to Landowners*, pp. 80, of which pamphlet Lord Braybrooke states, in the Saffron-Waldon report, that he has "met with no other publication in which the system of cottage allotments is so well treated."

Pamplin, William, jun., Lavender Hill Nursery, Wandsworth, near London: A Catalogue of Old Books on Botany and Gardening, &c. &c. Clapham, 1831. 8vo, pp. 8.

Mr. Pamplin has formed a depôt which we think likely to prove of real use to reading gardeners; because they may there purchase old books cheap, dispose of books when they have done with them, or make exchanges. We have little doubt that, in time, Mr. Pamplin will establish a circulating library of his class of books, which would be patronised by gardeners and gentlemen in every part of the country, more especially if it contained high-priced works, such as the *Botanical Magazine*, *Botanical Register*, *Horticultural Transactions*, &c.

ART. IV. *Literary Notices.*

PY'RUS *Màlus Brentfordiénsis*, or a descriptive catalogue of the best sorts of British apples, accompanied by coloured figures, is in the press, and will appear about the same time as the present Number. We have mentioned this work on various occasions, as being the production of Mr. Ronalds of Brentford, and of his daughter Miss Elizabeth Ronalds. We cannot too highly recommend it to every nurseryman, and to every proprietor who wishes to select and plant the best sorts of the most useful of all British fruits.

A Guide to British Fruits and Culinary Vegetables, by Mr. George Lindley, edited by his son Professor Lindley, is in the press. It will, without doubt, be a most useful work, and we cordially recommend it.

waste corner about the fields may be planted with the tubers in April or May; the same treatment given to them as you would give to potatoes, and you will have a good crop. On the approach of a storm, take up a quantity of the roots, and put them down where you wish hares to frequent; in a few nights you will find them all eaten up; frost does not hurt them. Hares also greedily eat salsafy (*T*ragopògon màjor), French sorrel (*R*ùmex scutàtus), and common parsley (*A*'pium *P*etroselìnum). All these plants may be raised to perfection in a few months. Sow in April. I see by your Magazine that you have few correspondents in this quarter: I intend to send you some notices after this; and, should they be of no use to you, still they are improving me. — *X. Y. Z. Near Renfrew, Feb.* 16.

We thank this very intelligent correspondent for the communication sent with the above for our *Magazine of Natural History*, and shall be most happy to hear from him frequently. We wish he would describe the gardens in his neighbourhood. — *Cond.*

Durability of Red Cedar Posts. — A new cedar gate-post was taken up in Nov., 1822, by Mr. William Hughes of Southwark, which, it was ascertained by a deed, had been put down ninety years before. It had marks of four sets of iron hooks being eaten off by time, and nail-holes without number, yet the post was fit to be put down again. Mr. Hughes was determined to mark the place to which he may remove it, so that his grand-children may tell future generations its age. (*Poulson's American Advertiser*, Nov. 21. 1829.) — *J. M. Philadelphia, Aug.*, 1830.

Knowles's Hop-pole Drawer by Lever and Fulcrum is an invention that may be very easily understood. Its use is to draw the poles perpendicularly, and thus to avoid breaking them, as well as to prevent the hops from being bruised. — *P. Jan.* 1831.

ART. II. *Domestic Notices.*

ENGLAND.

EPINAL Hats for Lady Gardeners. — These may now be obtained at Mr. Charlwood's, as well as the skewers elsewhere (p. 234.) recommended. Both these articles being manufactured by the children of poor labourers in Sussex, under the direction of a benevolent family of ladies, are, independently of their real utility, deserving of every patronage on the score of charity. — *Cond.*

South of England Botanic Garden. — Sir, I gave notice, two years since, in the provincial papers, of my intention to establish a botanic garden on an extensive scale. This being one of the most southern parts of the island, and the extent of land I shall devote to the purpose being considerable, I trust will sanction the latitude I take in naming it the " South of England Botanic Garden." There is nothing of the kind in this part of the country, if we except, indeed, the Spa Tea Gardens, occupied by Mr. Page, which are designated by him the Spa Botanic Gardens, and to which persons subscribe ten shillings annually to drink the water, &c. To call this ground a botanic garden, however, appears to me a burlesque on the science, it being in extent only 60 ft. long by 50 ft. wide, a few feet more or less. I intend my garden shall be open to public inspection gratis, under certain regulations, and shall be most happy to inform you of its progress. Having had the care for several years of the London Botanic Garden, Sloane Street, some eighteen or twenty years since, when it was the property of Messrs. Curtis and Salisbury; and having served an apprenticeship in the highly respectable firm of Whitley, Brames, and Milne, you will, I am sure, give me credit for knowing something about the routine of gardening and botany. The extent of my grounds is about a hundred acres; sixty of which are devoted to nursery and botanic ground, and shall contain every species of *hardy* plant that can be obtained. I have got made 6000 bricks with a sloping top for naming them, which are painted of a stone colour, and marked with black numbers, 2 in. long; the edges or angles of the brick being smoothed off. The numbers, when dry, I shall varnish over. From sixteen years' experience, I consider these bricks superior to every other label either of wood (wheel-spokes) or iron; as those I did sixteen years since are just as good now as when first done. These brick tallies cost only 4*s*. per hundred making; of course, not painting or printing included, these being done by myself or my foreman.

My land has been recently enclosed from the common, and is like a blank sheet of paper. I have every thing to create on it, but have provided for the accomplishment of this object in a systematic manner by a plan which I shall submit to you, together with that for my botanic garden. My stock plants of fruit trees are from the London Horticultural Society's garden, whose nomenclature I have adopted; which, if generally done by country nurserymen, would place them even in the scale with the London growers.

I shall feel obliged in your giving publicity to the above outlines, as I may require to draw largely for plants on others professing the same objects.

I have been extensively engaged in planting (mostly by contract) for the last sixteen or seventeen years, with the best success, and have some observations and information to give on the subject, at a future date. I am, Sir, &c. — *William Rogers. Southampton Nursery, Feb.* 2. 1831.

Botanic Garden, Bury St. Edmund's. — At p. 96. we noticed the change in the site of this interesting establishment. Since that notice, Sir Thomas Gery Cullum, Bart., F.L.S., &c., has purchased the old garden, and it is to be converted into a cemetery on the plan of Père la Chaise; thus adding yet another scene of interest to this already most beautiful town. The Mausoleum at present existing in the centre of the spacious churchyard at Bury, foreshows the disposition of its wealthier inhabitants for ornamented places of interment. This Mausoleum is a mound of earth, about 20 yards long by 15 broad, in figure an irregular oval, and enclosed with iron palisades. Immediately within these is a gravel walk, and next this a border of shrubs and flowers, with here and there a tree; one of these, a weeping ash, appropriately overhangs an urn, which surmounts a tomb. This border is bounded at the back by a tall wall well covered with ivy, except where the tablets and monuments fixed in it display themselves; these are rather numerous, and excite, by their various inscriptions, the sympathies of many a gazing traveller. Some lines by Bullen the grammarian on a child struck dead by lightning while in the act of saying its prayers receive much attention, and those by Smyth on his friend Dr. Hague, late Professor of Music at Cambridge, who is buried here, are very beautiful. The area within the wall is occupied by vaults (some of them above ground), and by trees, as the horsechestnut, the Lombardy poplar (male), the acacia, and others; while growing out of the upper part of the wall, at the western end of the area, is a plant, large enough to bear fruit annually, of the white-berried elder. The group formed by the blending branches of these trees, the tall wall mantled and crested with the dark-green ivy, the white faces of the monuments contrasting finely with its deep verdure, and the cincture of shrubs and flowers encircling all, are objects which the imagination of every reader or beholder will separate, combine, or beautify in the manner most agreeable. — *J. D. March* 10. 1831.

Public Cemetery. — A public cemetery is proposed to be formed in the neighbourhood of Plymouth, similar to that at Liverpool in point of general arrangement, and the money is to be raised by shares, after the manner of the Metropolitan Cemetery. (*Plymouth and Devonport Weekly Journal*, Feb. 10.) This is another point in which we are imitating the French and Germans. May general cemeteries, abbatoires, parochial institutions, and public gardens soon spring up all over the country! — *Cond.*

Public Garden at Lynn. — The improvements connected with the public walks at Lynn are now completed, as far as practicable this season, and reflect equal credit on the projectors and promoters of the work. The Red Mount piece has been judiciously planted, leaving undulating lawns and broad gravelled walks; the rivulet which bordered it has been considerably widened throughout, much more at some points than at others, forming a picturesque piece of water; the eastern bank has been raised and prepared for planting next season, when, we understand, further additions and improvements are in contemplation. Even now there is, perhaps, scarcely a town in the kingdom that can boast of public walks of equal extent and beauty. The improvements going on in Lynn are not however confined to mere ornament, for others of the greatest utility are in progress; and among the most necessary of these, a handsome new market-house is immediately to be built, and the site is now clearing of the old buildings; this it is contemplated to make sufficiently large to form a covered building to receive all the butchers, poulterers, gardeners, &c., usually attending the market. The water-works are to be immediately commenced, a work of the greatest utility of any that have of late years been undertaken. (*Cambridge Chronicle*, June 26. 1829.) We should be happy to hail this as the commencement of similar improvements in all our country towns, there being scarcely one of them that is not greatly in want of alteration in this respect. When any town or large village in England is compared with the towns and villages of corresponding size or importance on the Continent, we appear to be sadly behind. Nothing can be more clear to us than the reason; we feel it operating on ourselves; and every man who has not an independent fortune, or a place under government or in the church, must feel it; we mean, the necessity of continued application to business from morning to night, in order to be able to pay our proportion of the enormous amount of taxes of every kind with which this country is loaded. This continual care and incessant labour harden the heart, smother all the finer feelings, incapacitate for light and elegant enjoyment, and so limit and degrade the powers of the mind, that the individual in the end becomes a mere machine, good only for the particular kind of labour to which he has been accustomed. If the industrious inhabitants of the towns of England were relieved from two-thirds of the taxes, they would have some leisure for cultivating their taste, and for rural enjoyment; and we should soon see our towns with public gardens equal to those of Frankfort, Nuremberg, and Munich, mentioned or described in former Numbers. As the knowledge or desire of any thing is a grand step towards its attainment, we hope this example of Lynn will raise up desires in other towns, and that these desires will in time become so effectual as to lead to their gratification. — *Cond.*

Changing the Site of the Liverpool Botanic Garden. — At a late Meeting, a report of the Committee was read, recommending the removal of the garden to some more open and airy situation, on account of the increase of buildings in the neighbourhood of the present garden; and stating that the Common Council had very liberally allowed the proprietors to dispose of the present ground on leases of 75 years. After some discussion, the removal of the garden was agreed on, and the Committee were authorised to treat for a suitable piece of ground, in whatever part of the neighbourhood they might think most desirable. On the motion of the Rev. Dr. Raffles, it was recommended to the Committee to consider whether arrangements could not be made for establishing a zoological garden, in connection with the botanic garden. It seemed to be the impression of the meeting that this object was highly desirable. (*Liverpool Times*, January, 1831.

Mr. Hitchen's Collection of succulent Plants at Norwich. — This is one of the most extensive in England. It contains 25 species of Melocáctus, chiefly imported plants from Mexico, 100 species or varieties of Stapèl*ia*; 240 of *Á*loe; 80 Melocácti; 70 Cèrei; 50 Opúntiæ; 12 Epiphýlla; 20 Euphórb*iæ*; besides Rhípsalis, Sempervìvum, Rulíng*ia*, *Yúcca*, Crássula, Cacàlia, Agàve, &c. — *W. Norwich, Dec.* 1830.

Divisional System of Occupation. — At Linfield, in Sussex, this system has been tried, with the happiest results, by the celebrated philanthropist William Allen. Sixteen cottages for labourers are now built there, with an acre and a quarter of land to each; and there are also six farms of from five to six acres each, and a house on each for the occupier. The tenants, if moneyless, but of good moral habits, can have any thing they wish for, as a cow, pig, &c., on condition of their paying interest for the purchase-money until they can repay it. Schools of industry are established at Linfield, trades are taught, and in short, the establishment is a scene of the highest possible interest. Mr. Allen prints there a little book called *The Philanthropic Magazine;* and, in a late number, an extract from the author of the *Peasant's Voice* occurs, dated Nov. 15. 1830. "The quantity of land let to labourers at Waterbeach is this year increased to 40 acres, an acre to each person. During eight years that the labourers have been in possession of their respective half acres, not one shilling has been lost in rent; the land is very much improved, and not one of the occupiers has been guilty of a breach of the public peace, nor of injuring the property of his neighbour. They have collectively, at this time, probably not less than 1000 bushels of potatoes covered up in their respective allotments in the open field, for consumption during winter; yet these are all as safe as if under lock and key. One of the occupiers, this year, grew as fine onions on a portion of his half acre as I have seen this season. Onions are scarce, and a tempting object to those who have not the means of purchasing; yet they were safe. I took four of them to the last show of the Cambridge Horticultural Society, which obtained for the grower a cottager's prize. Let a man, by his own industry, raise property he can call his own, and he will respect that of his neighbour. Had the system you advocate and *practise* been more generally acted upon, we should not have heard of the disturbances in Kent: the farmer might have slept in quiet; and a patrol and an armed yeomanry would have been unnecessary. But a patrol and an armed yeomanry will not allay discontent; they will not fill hungry bellies; they can do nothing but irritate an industrious, and therefore valuable, portion of the community, made desperate because they have not the means of making themselves and families comfortable by their labour. The cause you advocate must be attended to; the size of farms must be reduced; the labourer must become an occupier of a portion of the soil, or farewell to the peace, happiness, and prosperity of the country." — *R. S. March*, 1831.

Linfield has lately been visited by our esteemed friend, Mr. Denson, sen.*, the author of the *Peasant's Voice*, who called on us on his return. His highly impressive and affecting description of the infant schools determined us to take an early opportunity of examining them for ourselves. Of all modern schools, those for infants are to us by far the most interesting: give us one in every hamlet and village throughout the island, and we ask for nothing more. The rest will follow of course. — *Cond.*

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* See his paper on Scólytus, in the *Magazine of Natural History*, Vol. IV. p. 152.

The Labourer's Friend Society. — This Society has been recently established in London, for the purpose of disseminating knowledge beneficial to the farmer, the landowner, and the labourer. It gives away tracts, one of which we have seen; but it appears to us not duly to estimate the importance of general knowledge, and especially that of morals and political economy, to the grown-up poor, and of a high degree of education for their children. The address of this Society is, 51. Threadneedle Street. — *Cond.*

An Agricultural Society. — An Agricultural Society has just been established in Warwickshire, chiefly through the exertions of Sir Eardley Wilmot, a most benevolent and enlightened proprietor. Among the resolutions passed, was one to the effect that the recent disturbances among the agricultural labourers have arisen chiefly from "the practice of giving inadequate wages, to be made up out of the poor rates; and the having little or no garden ground round their cottages, so as to give them employment at their leisure hours." Their resolutions state "the first and chief object of the Society to be, to encourage the labourer in habits of industry, in the cultivation of his garden, &c., by premiums and the temporary loans of money." This is excellent so far as it goes; but there is not a single resolution, among the twenty-five passed at the meeting on Feb. 4., that has the slightest tendency to go to the root of the evil. The poor have become troublesome, and even dangerous, to the rich; and they must be quieted in some way or other. Feeding and clothing them form, certainly, the best mode to begin with; but the grand object, in our opinion, ought to be, to place the poor in a condition to enable them to take care of themselves for the future. There is no way of doing this, but by giving them some idea of their position in society; by teaching them that they are as much commodities in the market as the cattle which they rear, or the wheat which they cultivate; that the price of their labour depends as much on the supply in the one case as it does in the other; and that, the supply being in their own hands, it is always in their power, by refraining from early marriages, and by thus diminishing their numbers, to raise their wages, and put it out of the power of their employers to underpay them. Till the labourers of a country understand these things clearly, the recent miseries will, as has always been the case, be continually recurring. Knowledge, therefore, is the only essential foundation of improvement among the ignorant. All labourers above 40, who have not been readers from their youth, may be considered hopeless; but all under this age ought to be encouraged to peruse cheap pamphlets and newspapers; and all children should be sent to school, and subjected to the most improved methods of instruction till the age of puberty. The present population can be only saved by the press, and the coming generation by the schoolmaster. If the proprietors and the clergy understood the true and permanent interests of themselves and their families, they would imitate the French government, which has recently taken national measures for educating every individual that shall henceforth be born in France. But much of what the rich do for the poor, in this country, is founded on the principle of keeping them under as a distinct class: a generous policy, or any thing like universal benevolence or a love of human nature, is completely out of the question. With every disposition to think well of associations of men for public purposes, we confess we have not, for a long time, met with any thing that calls forth so little of our sympathy as the resolutions of the Society before us. They are altogether behind the age, and too plainly founded on the selfishness and fear of the landed proprietors, to excite either confidence or respect. We speak, however, only of the resolutions; the names which appear connected with them are, as far as we know, those of excellent men, who possess the best intentions of doing good; and, in particular, we highly respect Sir E. E. Wilmot, who, we know, from the best authority, has greatly increased the comforts of the poor on his own estates, not only by improving their dwellings and adding land to them, charging less for it than he could have got from the farmers, but even by granting loans of money to enable them to improve it. — *Cond.*

Improved Furnace. — A sort of gas furnace has been invented by Witty, an ironmonger of Nottingham, and two of them have been applied to hot-water apparatus in the pinery and conservatory at Alton Towers. Instead of coal, they consume the worst sort of slack (refuse). The advantages are, a saving in the article of fuel, and the total absence of smoke. — *R. J. L.*

Stewart's Patent Copper Lap for glazing Sashes. — You have described this lap in your *Encyc. of Gard.*, § 1630.: it may be interesting to gardeners and glaziers to know that Mr. Macgowan, button-maker, Gerrard Street, Soho, has the original mould, and can supply any quantity of the manufactured article. — *Henry Lowndes. Cedar Cottage, Brixton, Jan.*, 1831.

Peake's semi-metallic Tiles. — These tiles, the forms of which have been already figured in this Magazine (Vol. VI. p. 154.), well deserve the attention of architects who wish to place a covering of extraordinary durability and elegance on churches, theatres, manufactories, and every other description of spacious buildings. In weight and colour they are more like cast iron than earthenware; but paint may be applied so as to give them any tint. We consider this the very best tile for cottages; and Mr. Peake writes to us, that, wherever they have been so used, they have given the greatest satisfaction to the inhabitant, and the greatest pleasure to the man of taste. — *Cond.*

Machine for excavating Earth. — Mr. G. V. Palmer of Worcester has been ten years and upwards engaged in constructing an extraordinary engine to excavate earth, &c., for which he has taken out a patent. This engine works by steam, and is particularly adapted for cutting canals, levelling hills for railways, and removing large masses of earth. This engine cuts, at a single blow, 6 ft. in width and 3 ft. in depth; delivering on either side, or into carts, 1 ton and upwards per minute; it also cuts and sifts gravel in the same proportion for road-making. We understand there is great simplicity of construction, and the weight of the engine does not exceed 3 tons. (*Manchester Courier*, Aug. 21.)

Watering the Highways. —The road from London to Brighton is watered to the extent of 12 miles (that is, nearly one fourth of the whole distance), the expense being paid by a small charge of one farthing per horse per day, which is paid by the coach proprietors to the trustees of the turnpikes. — (*Newsp.*) If all roads were as much frequented as that to Brighton, they might probably clear the expense of watering them in a similar manner. Roads near the sea should be watered with salt water, which, as it attracts moisture from the atmosphere, does not dry so soon. This has been proved in Regent Street, London, which it was once in contemplation to water with salted water. — *Cond.*

The Kitley Shaddock. (Vol. I. p. 265.) — Sir, You would be delighted to see my shaddock tree at the present moment, with its fine clusters of fruit. I find trees worked by the bud from the original prove very fruitful, which is very desirable.

The China Orange is a very fine sort, if the fruit be properly treated; that is, if it be gathered at a proper season. I find the best time to gather it is just as the fruit begins to colour, having still a degree of greenness. After gathering, keep them in a warm room for about a fortnight previously to sending them to table; by which method the skin will be very soft, and the juice more delicious. This, I believe, is not generally known. — *Herman Saunders. Kitley, Feb.* 15. 1831.

Seeds of the Bitter Orange and the Pìnus Pínea. — The seeds of bitter oranges (Arancia forte) have been received by us from our correspondent at Florence. This kind is so much more hardy than the sweet oranges, that our correspondent is persuaded it will thrive as well in the open ground in Devonshire, Cornwall, or the south of Hampshire, as it does at Florence. We have accordingly sent the seeds to the following gardeners, with a request that they will attend to a paper on the subject of this variety of orange, which our correspondent has promised for a future Number; and that they will communicate to this Magazine their success with the seeds.

Devonshire. M. H. Saunders, gardener to E. P. Bastard, Esq. M.P., Kitley; Mr. H. Dalgleish, gardener to John Milford, Esq., Conver, near Exeter; W. Hamilton, Esq. M.D., Plymouth, two packets.

Cornwall. Mr. Booth, A.L.S., gardener to Sir Charles Lemon, Carclew, near Truro, two packets; the Rev. J. Lakes, Liskeard Vicarage.

Hampshire. Mr. Page and Mr. Rogers, nurserymen, Southampton.

The letters to all the above friends were despatched on Feb. 11. 1830.

The seeds of *P*ìnus *P*ínea, received from the same correspondent, were sent to Mr. Lakes, Mr. Gorrie, Mr. Brooks of Flitwick, and Mr. Baillie of the Dropmore Pinetum. — *Cond.*

A new Species of Cánna. — I have only time to enclose a few seeds of a *C*ánna which I received, by the last packet, from Dr. Bancroft, who had them from Carthagena. From his account it is a new and magnificent species, and is known to the inhabitants by the name of Bijao or Bishao, a name common to the heliconias, musas, &c., and which has been adopted as a trivial name for the Helicònia *Bihài*. I have, therefore, provisionally named this the *C*ánna *Bihài*, as sufficiently distinguishing it from all the other known species. Dr. Bancroft, in his letter of the 14th of last June, says: — "They (the seeds) come, I believe, from the neighbourhood of Carthagena; and I learn that a lady, who recently returned thence, has brought a plant of it, and is desirous of giving it to me. All I learn besides this is, that it produces a large leaf, which the natives use for many purposes." And, again, in a letter of the 2d of July, with a farther supply of seeds (those now sent), he says: — "I find the seeds which I sent you lately, which I suspected to belong to some species of *C*ánna, are in all probability of that genus; but it appears to be a nondescript species. They call it Bijao, and some Bishao; and it is much cultivated on account of its leaves, of which loads are daily brought to Carthagena and other places; they are 6 ft. or 7 ft. long, and proportionally wide, and have the peculiarity of being very pliable, without splitting, as the leaves of all other cannas (he might have added heliconias and musas) do; for which reason they are in constant use to pack things up in, instead of brown paper, as with us." Such is the account given by Dr. Bancroft of this interesting, and, I doubt not, splendid plant, which will, I am confident, prove no small acquisition to our collections; and which I hope to see shortly figured and described in the *Botanical Magazine*. I have sent a few seeds to the Liverpool garden, and hope they will attract the attention of the able and philanthropic Roscoe, whose labours have already been so usefully directed to the *C*ánneæ and Scitamíneæ. — *W. Hamilton.* 15. *Oxford Place, Plymouth, Aug.* 28. 1830.

We have given the seeds of *C*ánna *Bihài*, Bajagua from Arjona, and Acelga? (*B*èta *f*agifòlia) to our neighbour Mr. Campbell, than whom no man can raise them better, or will take more care of them. — *Cond.*

Remarkably large Cockscomb. — Of a fine cockscomb grown by Mr. Oxley, gardener to Lord Southampton, Whittlebury, Northamptonshire, the comb measured 27¾ in. over the top in length, and 10 in. over in breadth. Mr. Oxley had several plants with very large combs, but the above was the largest. — *A Young Gardener. Feb.* 1. 1831.

The heaviest Gooseberries in 1830. — In Vol. V. p. 728., I stated that the heaviest berry on record was the Roaring Lion, a red. This year, the red berry has been beaten, for the first time, by a yellow, the Teazer, which weighed 32 dwts. 13 grs. This berry made its first appearance at Wistaston on July 29. 1825, and then weighed 20 dwts. 6 grs. It was raised by W. Prophet, who grew it: another year before plants of it were sold out. In consequence of its having been this year the heaviest berry, great demand has arisen for plants of it, and they have sold from 2*s.* to 10*s.* per plant; and, even at this price, the growers have not been able to execute all the orders they have received for plants. The heaviest red, this year, is the Roaring Lion, weight 30 dwts. 14 grs.; the heaviest green, the Peacock, weight 28 dwts. 14 grs. This berry made its first appearance in 1827, as a seedling raised by J. Lovett of Wistaston. The heaviest white has been the Eagle, weight 27 dwts. 12 grs. — *M. Saul. Sulyard Street, Lancaster, Dec.* 20. 1830.

SCOTLAND.

Edinburgh Botanic Garden. — We have received from Professor Graham a plan of this garden, very beautifully delineated by Mr. Joseph M'Nab, the son of our esteemed friend, that most excellent cultivator, the curator. We hope this young man will prepare himself for the profession of a landscape-gardener, of which Scotland, we believe, is very much in want. We would recommend him to keep continually sketching landscape scenery from nature, and studying the works of Allison, Whately, Price, Knight, Mason, Gilpin, Girardin, and similar authors; and then let him walk over the principal parts of Great Britain, France, Germany, and Italy. Without that course of study it is quite impossible to rise to the summit of his profession, or to be at all fit to lay out the grounds of even a yeoman of 1850. To help to pay his expenses, let him learn to take portraits, which will pave the way for him every where on the Continent. — *Cond.*

Planting for Posterity at Craigmillar Castle. — When we plant apple trees as dwarf standards on paradise stocks, we plant them for ourselves; but, when we plant the same on free stocks, we do it not only for ourselves but for our grandchildren. This opinion I am led to form from having observed the old standard trees in the orchard beside Craigmillar Castle to-day as I rode past. They have stood the blast of nearly 300 years, and are still in a thriving condition. They were probably brought from France, and planted at the time the unfortunate Queen Mary was confined there after her return from the Continent. There are many standard pear trees in Scotland, upwards of two centuries old, still bearing abundantly. Nothing, therefore, gratifies me more than to see noblemen and gentlemen planting these trees in their parks and pleasure grounds; and I often think I can see them casting their shadows on the comfortable cottages of the cultivated peasantry of a future age. — *T. S.* (*a Correspondent of Mr. Saul.*) *Aug.* 1830.

The Edinburgh School of Arts. — This is an institution for the instruction of mechanics by evening lectures, and, in some cases, by lectures in the morning so early as six and seven o'clock. The fee of admission to all the classes for the session, including the privilege of borrowing books from the library, is only 10*s.* 6*d.* The ordinary subjects of the lectures are, Mathematics, senior and junior classes; Mechanical Philosophy; and Chemistry: but the session for 1831 will include a course on Natural History and Natural Theology, and one on Political Economy. The announcement of the lectures on the latter subject is thus given in the *Scotsman:* — "There are some subjects which do so materially concern the welfare of the labouring classes, and upon which they so frequently entertain the most erroneous views, that it is of the greatest consequence to set sound opinions before them, and to eradicate prejudices so injurious to themselves and the public welfare. How important is it to impress upon their minds the vast advantages which society derives from the establishment of the right of property, and the necessity of maintaining that right inviolate; to convince them that the security of property we have so long enjoyed in this country has been one main source of our power and opulence; and that every thing which tends to shake that security must be productive of the worst consequences, especially to the labouring classes; that differences of fortune are inherent in the nature of things, and that they are, in fact, as much a part of the order of Providence as differences of soil and climate! How seldom is the workman led to consider the advantages to himself and to the community of which he forms a part, arising from the subdivision of labour! How often have we had reason to lament the fatal consequences produced by prejudices against the introduction and improvements of machinery! How sadly ignorant are the working classes of the circumstances by which the wages they receive for their labour must be regulated! What inestimable blessings have been derived from the establishment of friendly societies, savings banks, and those associations which teach the labourer to be provident; and how often have the savings of years of economy been lost by errors in the principles upon which these associations have been formed! Of what vital importance is it to the state that the working classes should feel, that to look to any other resources than their own exertions for their support; that to depend upon the funds which the poor laws supply, and which should belong to the aged and the sick, to those who cannot labour, and who have none to help them, degrades them as men, and bereaves them of what they should most value — a virtuous independence!

"These are undeniable truths; and this institution cannot be more certainly or more extensively useful than in removing ignorance so fatal in its consequences, and in diffusing correct opinions upon subjects so intimately allied with the well-being of the labouring classes, and, through them, of the community at large.

"The directors propose, therefore, that there shall be a lecture weekly during the remainder of the session upon the following topics: — 1. That security of property is indispensable to the welfare and advancement of society; and that differences in the fortunes and conditions of individuals must necessarily exist in every community. 2. On the advancement of civilisation, and the improved condition of the working classes, from the subdivision of labour. 3. On the advantages to all classes of society from the introduction and improvements of machinery. 4. On the circumstances which regulate the wages of labour. 5. On the advantages of friendly societies, savings banks, and other provident associations; with an exposition of the principles upon which they must be established, in order to secure their stability. 6. On the operation of the poor laws, as affecting the character and condition of the labouring classes."

When we compare the present intellectual state of the labouring classes of Edinburgh with what it was when we were at school there thirty-five years ago, when there was not even a police, the progress appears very considerable. At that time the lower classes were as completely eaten up with fanaticism, as they had been a short time before with democratical principles. The true way to keep a people steady, either in opinion or conduct, is, to enlighten them generally and to the utmost; because, when the mind is occupied with a variety of subjects, it cannot so easily be overwhelmed with any one new idea. A new and striking idea, to a vacant mind of native vigour, may be compared to a single seed inserted in a piece of naked ground; it soon, whether useful or noxious, takes exclusive possession of the whole plot. To enlighten the whole of a people by education would therefore be not less politic on the part of a government, as a means of governing them with ease, than it is benevolent on the part of individuals with a view to the increase of the comforts and happiness of their fellow-creatures. The object of the lectures on natural history and natural theology, to be delivered at the Edinburgh School of Arts, is, by cultivating the heart as well as the head, "to guard against the possibility of mischief from a too exclusive study of the mathematical and physical sciences." — *Cond.*

IRELAND.

Horticultural Society of Ireland. — At a meeting of the committee, held Jan. 3. 1831, for the purpose of adjudicating premiums for winter pears, the following were adjudged: — For the best pear, Mr. Wilkie, gardener to William Gregory, Esq., Phœnix Park. For the best Crassane pear, Mr. Wilkie, gardener to William Gregory, Esq., Phœnix Park. For the best Colmar pear, Mr. Thomas M'Mahon, gardener to Mrs. Rathbourne, Scribblestown. The best Poir d'Auche, Mr. P. Vaughan, gardener to James Jameson, Esq., Montrose. The best Chaumontel pear, Mr. Doyle, gardener to Mrs. Edwards, Friar's Hill, county Wicklow. There were also presented to the Society, by Thomas Heary, gardener to Isaac D'Olier, Esq., several bunches of black Hamburgh, white sweetwater, and muscadine grapes, in excellent preservation, with a communication to the Society upon the mode of keeping them; and also specimens of 21 named varieties of choice winter apples, in good preservation. There were also presented to the Society, by Mr. M'Cabe, gardener to the Right Hon. William Saurin, specimens of hemp manufactures, from the leaf the *Phórmium tènax*, or New Zealand hemp. The committee are happy to state that the show of pears, which was very considerable, far exceeded any exhibition hitherto held at this season of the year, and contemplate with much satisfaction the increasing zeal in the improvement of horticulture evinced by the gardeners in the vicinity of Dublin. (*Dublin Evening Post*, Jan. 6. 1831.)

The Horticultural Society of Ireland. — Sir, An anonymous writer in the last Number of the Gard. Mag., who styles himself an observer of Irish jobbing, in his remarks on the Horticultural Society of Ireland has stated that, although I am a member of the committee, "I must abhor its intended proceedings." This statement but ill accords with the previous character he has been so kind as to give me, as being a man of candour; and I would therefore beg, through you, to inform him that I would not give my name to any society of whose principles I did not approve. He also states that most of the members of the committee belong also to the Dublin Society, and that some of them are on the committee of botany there. I am not aware of more than two members of that Society being on our committee; one of whom, who is on the committee of botany at the Dublin Society, has long been well known as a gentleman of first-rate taste and knowledge in horticulture and floriculture; and the other has given good evidence of his taste and knowledge in floriculture by the introduction and cultivation of many rare and showy plants. I shall not at present trouble you further on this subject, but shall leave it to the public to judge of the proceedings of the committee generally by their future conduct. It was, I think, rather unfair to prejudge a society before it could fairly be said to have commenced its operations. I am, Sir, &c. — *James T. Mackay. 5. Cottage Terrace, Dublin, Feb.* 23. 1831.

State of Botany and Civilisation — In Vol. V. p. 305., under the notice of the *Botanical Miscellany*, I find the following statement, taken from a translation of Schultes's *Botanical Visit to England;* of whom it is justly remarked, that "he is profuse in his compliments to some individuals, and severe on others." The paragraph I allude to is the following: — "Of Ireland," he says, "he was informed, by very many Englishmen, that it is safer to travel among savages than on the west coast of Ireland, which is the reason why the botany of that country is as little known as that of Sardinia." Now, as I happen to know something of the people and plants of that "dangerous country to travel in," having made a botanical tour of sixteen weeks, during the summer and autumn of 1805, over the southern and western coasts, from Bantry Bay to Sligo, I can tell him and his wise informants that there are several plants indigenous to those parts not to be found in either England or Germany; and that, although several English botanists have also been there since that time, none of them, that I have heard of, have added much to our stock of knowledge. On the mountains and other places near Killarney are to be found the following species of the genus *S*axífraga: viz. Gèum *E. B.*, hirsùta *E. B.*, serratifòlia *Haw.*, polìta *Haw.*, élegans *Mackay MSS.*, grácilis *MSS.*, læ'vis *MSS.*, the affìnis of Don, incurvifòlia *Don and Hooker*, and others less rare. In the beautiful demesne of Muckruss, near Killarney, I had the good fortune to discover *T*richómanes brevisètum in fruit, and, at the same time and place, the beautiful Jungermánn*ia* Hutchíns*iæ*, which has not yet been found in any other country. I can also inform your readers, that, should they be botanists, and ever happen to visit Cunnemara, on the western coast, they may see the Menzièsi*a* *p*olifòlia, not found in Britain, growing abundantly all over that wild but interesting country, and, I may now add, the *E*rìca mediterrànea in prodigious quantity in one place, the rare Eriocaùlon septangulàre in many of its numerous lakes, and the Rhynchóspora fúsca in bogs; on the coast, *A'*rabis ciliàta; and on Ben Baulbain, near Sligo, Arenària ciliàta, not found in Britain; together with many other rare and interesting plants. I can also assure them that they will be as safe in travelling through Cunnemara as any where in England, and, should they be as fortunate as I was both times I visited that country, they will meet with as much kindness and hospitality as I have ever found in England or any where else.

When in Cunnemara, they might safely venture across to the largest island of Arran, which is only fifteen miles from Rounstone, where is an excellent harbour, and near to which the *E*rìca mediterrànea grows. There they would see the rare and beautiful **A*diántum *C*apíllus Véneri*s* growing frequently to the height of 18 in. or 2 ft. in the fissures of limestone rocks, of which the island is principally composed; and on a little island called Straw Island, close by it, they would find Matthìol*a* sinuàta. Should they find Mr. O'Maly, the principal resident gentleman, at home, they may perhaps, as I did twenty-five years ago, after spending a pleasant long day in exploring the island, sit down with him in the evening to a good dinner, consisting of roast beef, turbot, and other accompaniments, and a glass of excellent claret; and might then return home with somewhat different ideas of the west coast of Ireland than they had formerly entertained.

In 1806 I gave to the Dublin Society, for publication, a list of some of the rarer and more useful plants found by me in two extensive tours in the southern and western counties of Ireland; and in 1804 I published a list of the phænogamous plants and ferns found by myself and others up to that period. Since that time one or two genera and above twenty species have been added to these lists, in which it will be seen that the number of genera then found amounted to 374, and the species to 935: the corresponding British genera, including the Irish, then amounted to 457, and the species to 1487. Copies of my list, with the particular habitats of the rarer species, are very much at your service, for distribution among your foreign or other botanical correspondents. — *James T. Mackay. 5. Cottage Terrace, Dublin, Feb.* 1. 1831. [We shall be happy to receive a few copies. — *Cond.*]

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* In the writings of Sir J. E. Smith and other botanists, the Irish habitat given for this fern is "South Islands of Arran, opposite Galloway." The last word should be Galway. The habitat given on the authority of Professor Beattie, "by the banks of Carron, Kincardineshire," I fear is incorrect. I forgot to state that my excellent and most intelligent friend, Mr. Wilson of Warrington, has added lately to the Irish and British floras the Hymenophýllum Wilsòn*i* of Hooker; and *H*ýpnum flavéscens, a new species; and has also added a new habitat of the very rare Daltòn*ia* splachnöìdes. — *J. T. M.*

Art. III. *Plan for a Meteorological Journal, to be kept at different Places, with a View to the Anticipation of "coming Weather."* By Mr. Gorrie, F.H.S. &c.

Sir,

I have been favoured with yours of the 11th and 12th, enclosing a copy of a letter to you from Mr. Rogers, Southampton, respecting hints, by Mr. John Machray, as to "coming weather" (p. 109.); and I have much pleasure in complying with your request, and offering a mode to be by you submitted to the consideration of Messrs. Rogers and Machray; or, if you think proper, to be printed in the next Number of the Magazine as an introductory essay on the subject.

My ingenious young friend, Mr. John Machray, seems to inherit a little of that trait of character peculiar to us who claim kindred with the second-sighted "*Clan-nan-Gael*," firmly believing that "coming events cast their shadows before." It is a popular opinion that storms generally come upon us from the south, "whence comes good but rare:" the result of our observations, if regularly published in your widely circulated Magazine, will show how far that opinion is entitled to credit; to do the subject justice, however, it is necessary that our observations be taken in a *uniform manner*, and on definite and scientific principles. To give an account of the weather of every day, from three places, would, I apprehend, be extremely fatiguing to your readers, in whatever form that account appeared; and unless "storms," which seem to be Mr. Machray's leading object, occupy a prominent part, the result he wishes to ascertain might be overlooked.

As wind forms a prominent agent in storms, its direction and velocity ought to be strictly remarked. Mr. Rogers will agree with me, that the terms "wind moderate," "wind very high," or "wind lulled to rest," are too indefinite to enable us to arrive at any practical result. A very simple and at the same time philosophical anemometer, invented by Professor Leslie*, and which is easily within our reach, will enable us to hold a common and intelligible sort of language on that subject.

The professor found that "the cooling power of a stream of air is proportional to its velocity;" and, from an algebraic formula, we have the following simple rule: — Mark the temperature indicated by a thermometer in the *still air;* apply the hand to the ball till the alcohol rises a certain number of degrees; then mark the number of seconds that elapse till it fall exactly *half* the number of degrees raised. Raise the alcohol again the same number of degrees, and expose the ball to the full impression of the wind, and mark the number of seconds that it takes to fall *half* the number of degrees it rose. Divide the number of seconds elapsed in *still air* by the number of seconds elapsed in the *full play of the wind*, throw off 1 from the quotient, and multiply it by 4½: the product expresses the velocity of the wind in miles per hour. For example: suppose the temperature in the *still air* is 50°, and that it is raised by the hand to 70°, and that it requires 100 seconds to cool down to 60°, or the half of the increase to which it was raised; suppose that it is exposed to the current of the wind, and is raised to the same height, and cools down to 60° in 10 seconds, the example will stand thus: — Divide 100 by 10, which gives 10; throw off 1, and multiply 9 (the remainder) by 4½, which will give 40½ miles per hour. (See Brewster's *Encyclopædia*, art. Anemometer.) I may here remark, that, at the sluggish motion of 1 mile per hour, the direction of the wind is hardly perceptible; at 5, it is a gentle wind; at 11 miles per hour it is called a pleasant brisk gale; at 35, a high wind; at 50, very high wind; at 62, a storm; at 71, a great storm; at 88, a hurricane; at 110, a hurricane that tears up trees and throws down buildings. But, as I have already found fault with such indefinite terms, I would propose to state the velocity in miles per hour. The direction ought also to be accurately noted.

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* Essay on Heat.

Falls of rain or melted snow should also be noted in inches and decimals. The mean temperature of the day during a storm should also be registered; and it may be found by the mean of daily observations at 10 A.M. and 10 P.M. with an ordinary thermometer; or at the mean of the daily extremes, by Six's thermometer, or by what is called a night-and-day thermometer; the difference between the two modes will not exceed a small fraction of a degree in twelve months. Stormy phenomena occurring within the month may be expressed in the following tabular form: —

Phenomena of Winds.				Fall of rain, or of melted snow.	Height of Barometer.	Mean temperature during the storm.	Minimum temperature during the storm.
Dates.	Direction.	Velocity in miles per hour.	Direction.				

This table should be accompanied with a brief summary of the ordinary phenomena of the weather for the two months, in popular and concise language, from each place; in which the periods at which the winds shifted, the extraordinary fluctuations of temperature and atmospheric pressure, duration of clouded or clear atmosphere, and the mean temperature and mean height of the barometer for every ten days during each two months, should also be noticed. By attending strictly to the recording of the mean temperature at Southampton, at Howick, and at Annat Gardens, a question interesting to meteorologists, and to those interested in the progress of vegetation, respecting the mean temperatures of different places, would be solved. It is the opinion of many, too, that a simultaneous fluctuation in atmospheric pressure takes place over a considerable breadth of the earth's surface: our remarks may tend to confirm that opinion. As both phenomena are affected by the height of the place of observation, that elevation above the sea should be noted. I would propose that our observations commence on the first day of March, and be sent for publication in your June Number, on the first day of May, and regularly every two months afterwards. It may be unnecessary to say, that correctness of meteorological instruments, accuracy of observation, and punctuality of communication, are indispensable requisites in the undertaking. I am, Sir, yours, &c. — *Archibald Gorrie. Annat Gardens, Feb.* 23. 1831.

ART. IV. *The Arborètum Británnicum.*

Respecting your intended "Arborètum Británnicum" I have a few remarks to make, which, for want of time I could not before commit to *paper.* The work promises to be a most useful and interesting one, but a *most laborious* undertaking. I particularly like the idea of giving figures representing the characters of each tree, both in and out of leaf; but I greatly fear that to do this as it should be done will be enormously expensive, and to do it badly would be worse than not doing it at all. Very few artists are capable of hitting off the characters of even our commonest trees; and many of our shrubs scarcely afford sufficiently strong characters to allow of their being expressed on paper, at least on so small a scale as must be adopted in your book. Nevertheless, I do not wish to discourage you.

I have often thought that a good quarto volume or more might be filled by any one who had leisure and abilities, under the title of "A Sketch of the Natural History of the Oak." This would include figures and descriptions of the tree and all its parts; cultivation and growth; rearing and planting; timber, and its uses and durability; diseases; insects (with figures) which feed on it, which are very numerous; all sorts of oak anecdotes; and ten thousand other matters which do not immediately occur to one. In short the subject would branch out *ad infinitum;* and this is what you propose to do with all the trees and shrubs that will bear our climate! Why do young oaks carry their leaves till spring, when the fresh ones come and push them off? And not only young oaks, but occasionally old ones also? I have myself an oak of considerable size, growing on a farm about ten miles off, which holds its brown leaves every year till spring. How long a shoot did you ever know an oak to make? In answer, I extract the following from my memorandum book, made at the time, and on which you may depend: — "Late in the spring of 1819 there were several nights of very severe frost (particularly the 29th of May), which cut off the ash, and oak, &c., turning the young shoots as black as if they had been boiled; in short, they were utterly killed; nevertheless, the summer of this year (1819) seemed to be particularly favourable to the growth of young oak; many made a shoot of 4 and 4½ ft., and some of 5 ft., and I measured one (a seedling sown where it stood, of eight or nine years' growth) which made a shoot of 6 ft. 9½ in. A young mulberry tree, which had been much cut by the frosts in the end of May, afterwards made shoots of 2 ft. The preceding summer (1818) had been very fine and hot, so that the wood was well ripened; and to this circumstance, probably, the great shoots of 1819 are in good measure to be attributed." I may add, as regards the soil in which the young oak grew that made a shoot of more than 6 ft., that, before the ground was sown with acorns, the turf had been pared off for garden purposes; the soil left, therefore, was very shallow, and beneath it a loose rocky sandstone. In this situation most kinds of trees grow remarkably well.

The wood of the ivy is said to be good for the purpose of making handles for workmen's tools, as e. g. the handles of a scythe, &c., because the wood is of all others least apt to blister the hand. Is there any truth in the old idea that the aromatic gum of the ivy, which is produced by wounding the stem, is good for fishing-tackle, enticing the fish by its sweet odour? I hope you do not maintain, with some landscape-gardeners of note, that ivy is not injurious to trees. I greatly admire ivy, and can show on my own premises as fine (or finer) specimens as most people, and I would not destroy it for the world; yet I am quite satisfied it is injurious to trees. I have cut down both fir and crab trees in which there were deep wales made in the solid wood by the lapping of the ivy, in which you might lay your finger; and yet I know practical woodmen who hold that it does no harm, nay, that "it keeps the trees warm:" and true it is, that, when a large body of ivy is suddenly cut off a tree, the tree is often injured by the change. The woodmen above alluded to acknowledge that ivy injures the bark of trees; and therefore I should say, the wood and growth too.

Can you tell me why it is that so many healthy holly trees are always barren? — the two largest on my premises here (one an extraordinarily fine

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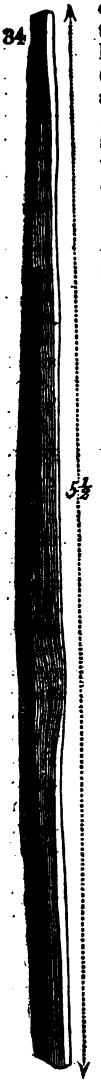

one, and of which I meant Strutt to have made me a sketch, for the purpose of starting this very question) never since my recollection bore a berry in the world. On examining the flowers (which the trees in question produce in abundance) I find they are all imperfect in the styles. The beautiful Polyómmatus Argìolus (azure blue butterfly) delights to hover about and settle on the holly; and the caterpillar, I am told, feeds on it, though I never discovered it. What minute insect is it that destroys the leaf, eating the substance between the two skins? See specimens.*

Do you know any peculiar purpose to which the wood of the common guelder rose (*V*ibúrnum *O'*pulus) is applied? I found it out quite by accident, as follows: — A few years ago I was felling a small coppice, in which a good deal of *V*ibúrnum occurred among other brushwood; and my woodman, who has always a pride in making a shilling extra for his master if he possibly can, told me that he had found a customer for all the dogwood or dog tree (so he called the *V*ibúrnum) he could supply, and that he sold it for more than it would bring when cut up, as usual, into kids and faggots. His customer, he said, bought the wood for the purpose of making it into skewers for the watchmakers. (See a specimen, *fig.* 34.) This puzzled me much, and set me to enquire of the manufacturers at Coventry what they wanted them for; when I was informed that they use these skewers to clean out the pivot-holes of the works of a watch, and that they prefer this wood to all others for the purpose, and always keep a stock of skewers in the manufactory. What particular quality there is in this wood, that renders it preferable to others for this purpose, I could not learn.† Talking of skewers reminds me what very nice natural ones are formed by the thorns of the common quick or hawthorn; of which I enclose a few of my own scraping as specimens. (*fig.* 35.) The cook should always be supplied with these, to fix, e. g., a paper over the fat of a piece of roasting beef, or for any other purpose where a small skewer is required, and where she (nasty woman!) would, but for these thorns, use pins, and, of course, stick them first in her mouth. Pray recommend these natural skewers; they are so clean and tidy, and easily procured; they only want to be scraped of the bark while fresh. Were I a labourer's child, I would get many a shilling by selling these thorns, and I think the higher orders would be ready to buy them.‡

The wood of the crab is, I believe, particularly good for millwork, cogs of wheels, &c.

You must not fail to notice all sorts of insects (injurious and otherwise) that feed on the various trees and shrubs. The oak, I believe, affords food to more insects than any other plant we have. A great many of our beautiful Lepidóptera (moths especially) feed on it in the larva state.

The Athenian poplar (i. e. what we call by that name, but

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* We sent the leaves to Mr. Haworth, who says that they "are infested by a hymentoperous intercutaneous insect; but I cannot tell you the name, unless I saw the insect in its imago state. The leaves contain only the empty pupæ." — *Cond.*

† The *V*ibúrnum *O'*pulus is preferred by the butchers about the metropolis for skewers. The spray is collected by poor persons, and made into skewers of about six inches long, which are sold by the bushel to the buyers. — *J. M.*

‡ *We have written to a party, who has engaged to place a few hundreds*

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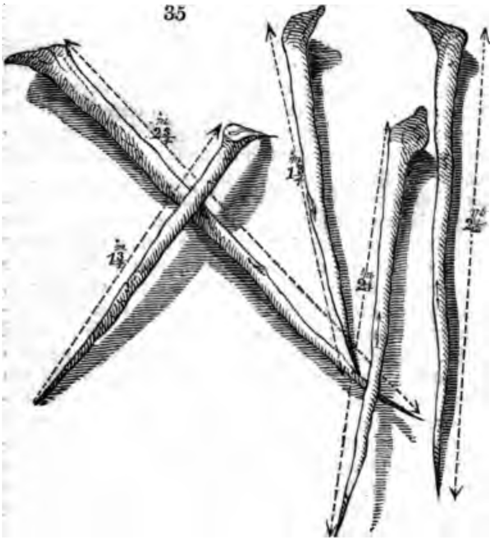

whether correctly I cannot say) affords food to the caterpillar of the poplar hawk moth, the puss moth (Vínula), the kitten moth (Fúrcula), the pebble prominent moth (Zíczac), and the chocolate-tip moth, several of which are not common.

Last winter during the snow I found the mice destructive to my holly bushes, by nibbling off the bark from the branches which were near the ground. I could not think why it was that so many of the branches died and turned brown, till I examined further, and found all the bark gnawed off about the level of the surface of the snow. Rats, also, I have found, at various times, to commit depredations on my young oaks in a plantation near a brook and small pond. They gnaw the tree off just below the ground; sometimes nearly as level as if it had been cut with a saw. Young trees nearly as thick as my wrist have been served in this way; and I have been quite astonished how the rats could cut them through so completely, and could not at first tell whether it were done for meat or malice. The fact is, the rat begins his operations under ground among the soft and tender roots, and eats upwards as far as he finds the wood soft enough for his purpose, which is just below the surface: the consequence is, that the tree so served will often remain erect, and appear to the eye as if nothing had happened to it; but of course it throws out no leaves in the spring, and, on taking hold of it, you find it loose and ready to come up with a touch. I send you a specimen of a rat-gnawed oak; a small one [nearly an inch in diameter at the point about the collar, where the rats had left off], and the only one I now have by me. — *W. T. B. Allesley Rectory, near Coventry, Feb.* 1. 1831.

Art. V. *Retrospective Criticism.*

Erratum. — P. 121. Art. VII. line 1. for "last Number (Vol. VI.)," read "*Mag. Nat. Hist.*, vol. iii."

Physiological Botany. — Sir, With your permission I would willingly advance a few remarks in answer to the criticism of the two A. S.es on the above subject. (Vol. VII. p. 120.) I can by no means admit that I have promulgated this theory under "mistaken notions:" daily and

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of these skewers at Mr. Charlwood's by the 1st of April next, where they may be obtained by the public at moderate prices, and where all who are disposed to collect them may send them for sale; taking care, however, to have permission from the owners of hedges, or of thorn faggots. — *Cond.*

yearly attentive practice tends to confirm every word I have advanced, with many additional facts, which probably may be laid before the public when gentlemen phytologists and practical men have had time to divest themselves of the prejudices, so long grounded on errors, handed down from one writer to another, without any one doubting the accuracy of such apparently sound reasoning. It is an easy thing for an expert critic to garble out such parts of any scientific paper as will (with a little perversion) produce a seemingly good criticism for the moment; but this subject is too intricate to be loosely handled.

Mr. A. S. the first has taken a review of the experiments, without even noticing the time and temperature recorded therein, else he would have discovered what produced the second vegetation of the sickly vine. Only just cut the head off a young oak, or any other tree, and wait for the vernal atmospheric influence, and the analogy of the case will appear. This gentleman has not advanced one single idea to controvert the conclusions to be drawn from experiments, but has advanced *opinions* founded on the very facts which the experiments go to prove (and which he calls "mistaken notions"); namely, that the primary motion of limpid sap originates in imbibitions of the buds and spray, and descends to the extremities of the roots before the extension of roots or the vegetation of branches takes place. This is the sum total of all I have attempted to prove both in the experiments and essay; and if any practical man, who has to provide early grapes, peaches, &c., should adopt such practice as the experiments point out, taking the time and temperature there recorded as the principle of his proceeding, he will find (as I have) something more certain and satisfactory than the "laudable amusement" of A. S. the first.

Mr. A. S. the second commences his remarks by reciting my quotation from Miller's *Dictionary*, and states the reason of failure in early grapes, &c. I really wish this gentleman had disputed the assertions of Malpighi and Grew, and all their followers, thirty or forty years since; he would have saved me and other practical men many days and nights of painful anxiety for the loss of early crops. I cannot admit any merit to this Mr. A. S. for telling your readers that which my experiments have already proved: and there can be no doubt but that Miller was right about deep planting; else, why do the most sturdy oaks and other hard-wooded trees sicken and die, when undue masses of earth are mounded on their roots and boles?

The account of Van Helmont's willow was taken from Parkes's *Chemistry*; and if I have drawn more than the mere quotation from (my old friend) Mitchell's *Dendrologia*, it is more than I know. This Mr. A. S. adverts to the "powerful pen of Mr. Main," *very justly:* Mr. Main's criticism is of *sterling merit.* If he had put those vine grafts on, and watched their progress himself, he could not have illustrated that experiment more clearly. — *J. Thompson, sen. Welbeck, Feb.* 1831.

Corrections and Additions respecting the Habitats of a few Plants published in the Botanical Magazine. — Sir, Permit me to point out a few errors that appear in some Numbers of the *Botanical Magazine*, respecting the habitats of a few of the plants figured there. Although every one who has any taste for botany must admire the abilities of the gentleman who conducts that work, yet I trust an humble individual may, without presumption, point out an error which that gentleman may have inadvertently fallen into. In the *Bot. Mag.* for May, 1828, a figure is given of Houstònia serpyllifòlia, and in a note added by Professor Graham, he says, "found by Mr. Blair on the tops of the mountains of New Hampshire, growing amongst abundance of Andrómeda hypnöìdes and Menzièsia cærùlea." This is correct, except that the Andrómeda grew on the rocks, and the other two within a few yards of it. The *A. hypnöìdes* is given in the *Bot. Mag.* for Sept. 1829, and, overlooking the above note, he gives its habitat in Canada. I certainly think a person who has been in the habit of collecting plants, when he lights on a new or rare one, will not be apt to forget its habitat; and, when he falls in with a similar situation in the country, he will very naturally look there for the same plant; but, from what I have seen of Canada, from Quebec to Lake Huron, I think I may assert that there is no situation likely to be congenial to the growth of that plant. The Sievérs*ia* triflòra is figured in the *Bot. Mag.* for Oct. 1828: the White Mountains are given for its habitat; this I found near the village of Belleville, on the Bay of Quinté, Upper Canada, in a meadow, the only place in which I ever met with it; it was growing in company with Zigadènus glabérrimus, and Houstòn*ia* purpùrea. In the following month of the same year the Sievérs*ia* Péck*ii* is figured; it is not mentioned where I found it: but as Dr. Hooker had received specimens from America gathered on the White Mountains, he thinks the plants at Comely Bank are probably from the same place: in this he is correct; I found it there in great abundance.

In the Gardener's Magazine, Vol. VII. p. 102., Professor Graham, in an extract from *Jameson's Journal*, mentions the new or rare plants that have flowered at Edinburgh last year; amongst which is *R*hododéndron lappónicum, which he says was brought by me from Canada: this I also found on the White Mountains, but only one solitary plant. It may be plentiful in some places, but I had very little opportunity of examining the mountains, being on them only a part of a day in autumn (Sept. 1. 1826), during wet weather, long after the flowering season of any of the plants that I brought thence. I am, &c. — *T. Blair. Stamford Hill, Feb.* 12. 1831.

Sweet's "Florist's Guide" and our Reports of the "Provincial Horticultural Societies." — Sir, I beg to say that I fully concur with "An Amateur," in the last Number of the Gardener's Magazine (Vol. VI. p. 722.), in regretting Mr. Sweet's intended discontinuance of his *Florist's Guide.* At a time when so many botanical publications meet with ample encouragement, I think it is rather discreditable to the florists in general that they do not give more encouragement to a work so much calculated to diffuse a taste for the cultivation of florist's flowers; but I trust it is not owing to the "trickery of florists," as your correspondent insinuates. I cannot help thinking better of the great majority of my brother florists.

I must also, at the same time, give my humble but decided opinion against the occupation of nearly sixteen pages of the last and a considerable part of the preceding Numbers of the Gardener's Magazine with details of prizes obtained at different exhibitions of flowers, fruit, &c.; whilst there is a book, the *Florist's Gazette*, annually published at Manchester, exclusively for the purpose of giving an account of the different flower shows held in this kingdom, and of which I send you a copy. These pages, I consider, ought to contain subjects more interesting to the generality of the readers of the Magazine; whilst those who feel particularly interested in flower shows will be at liberty to purchase the *Florist's Gazette;* to the publishers of which all accounts of such shows should be forwarded, thus rendering that work still more complete.

As you request information respecting nurseries for the forthcoming supplement to the *Encyclopædia of Gardening*, I take the liberty of noticing our own, of no recent establishment, as it has been carried on in these and other grounds by our family for more than half a century. Though it may be thought something like ostentation in me, to say that it contains the best collection of plants of any nursery in the county of Stafford, in which it is situate, or in the neighbourhood of Birmingham, or in this part of the kingdom; yet, nevertheless, that this is the fact, no one, I think, will deny. Indeed, we have nearly as good a general collection of plants as will be found in any nursery in England, particularly of herbaceous plants, all the showy kinds of which we make a point of obtaining at the first opportunity, without any particular regard to expense.

A provincial nurseryman (if he makes any thing like a pretension) is obliged to keep a more general assortment of plants in his nursery, than is immediately requisite in the neighbourhood of London; because, if a London nurseryman receives an order for any plant he may not have in his own collection, he is able, without much trouble, to procure it from some one of his neighbours; whereas, one residing one or two hundred miles distant cannot procure them without a great loss of time and considerable expense, and consequently is obliged to cultivate a more general assortment, or he will not be able to execute his orders. I am, Sir, &c.— *Alexander Pope. Handsworth Nursery, near Birmingham, Jan.* 7. 1831.

We have repeatedly stated that we would much rather dispense with the trouble of recording the transactions of Provincial Horticultural Societies, provided we could do so consistently with rendering the Gardener's Magazine what it professes to be, a record of rural and domestic improvement. If we were even certain that the majority of our readers would be willing to dispense with the article "*Provincial Horticultural Societies*," we should be glad of that excuse to discontinue it.

With respect to the *Florist's Gazette*, referred to by Mr. Pope, and of which he has sent us a copy, we do not think it at all an adequate substitute for our article. It bears on the titlepage "Lancashire, Cheshire, Yorkshire, and other parts of the kingdom;" but it is, nevertheless, chiefly occupied with the flower shows and societies in the two counties first mentioned. The York, Leeds, and Newcastle Societies, certainly the most eminent three in the kingdom, are entirely omitted, and of course none of those of Scotland are included.

Our readers are much mistaken, if they think that we have either pleasure or profit in continuing our accounts of "Provincial Societies." Those of them who know any thing of printing, or of correcting the press, must know that the sheet containing the matter alluded to is by far the most expensive to the proprietors of the Magazine, and the most difficult to the editor and the corrector of the press, from the numerous erroneously spelt botanical names, and names of fruits and flowers.

With respect to the expense to the purchasers of the Magazine, the proportion of the last Volume filled with "Provincial Societies" is exactly one thirteenth part and a small fraction, or 1*s*. 7*d*.; and, while it is less by 1*s*. 9*d*. than the price of the *Florist's Gazette* and of the *Gooseberry Book* taken both together, as of course they ought to be, it contains what, we think, no one who knows these works will dispute, a description of information much more generally valuable. — *Cond.*

Mr. Nowlan and Mr. Plimley. — Sir, It gave me very great pleasure to learn, by Vol. VI. p. 731., that the many situations which were held by Mr. Aiton are now distributed among several gardeners. I regret, however, that no notice has been taken either of Mr. Nowlan, foreman in the forcing department at Kew, or of Mr. Plimley at Kensington, two excellent pine-growers and forcing gardeners. Their equal is rarely to be met with on the Continent; and I am sorry to say, that, should I live fifty years as gardener to the King of Denmark, I never expect to get a foreman so attentive, honest, and perfect in the business, as either of those respected gardeners. I am, &c. — *Jens Peter Petersen. Royal Gardens, Rosenborg, Copenhagen, Dec.* 23. 1830.

Heating by hot Water. — Sir, Allow me to give our worthy friend Juvenis Olitor a hint on the subject of the hot-water apparatus, with which, I think, he is but imperfectly acquainted; or, in other words, I should say that he is not versed in the scientific principles of this mode of heating; and for that reason would be liable to prejudice the minds of persons against it. On calculating the probable expense of such an apparatus as shown in Vol. VI. p. 671. fig. 130., where there are two boilers, two reservoirs, and 194 ft. of pipe, to two houses connected together, and only 40 ft. long each, any person would say that the expense would be enormous, and for that reason would not adopt the method at all. Now, Sir, those two houses contain only or about 7600 cubic feet of air, and as peach-houses require a medium heat of 55°, supposing the thermometer to stand at freezing, even then one boiler, both reservoirs, and 18 ft. of pipe, might be dispensed with altogether. By calculation I find that one boiler, 3 ft. 6 in. long, 1 ft. 2 in. deep, 1 ft. 6 in. wide, and 178 ft. of 4 in. pipe would be quite sufficient, even if the thermometer stood at 20°.

Should it be wished to heat one house more than another, this wish may be easily satisfied by inserting a throttle valve into one of the houses, which will effectually stop all circulation of the water, if required. Hoping these friendly hints will not offend Juvenis Olitor, I am, &c. — *D. D. Neeve. Wyndham Street, Jan.* 19. 1831.

The Pomological Magazine. — The nurserymen are not much obliged to you or Mr. Lindley for your doubts as to their sending the sorts genuine to their customers; and perhaps they are better judges than yourselves what to recommend, and can safely leave it to the public to decide where to give the preference, although they may not be able to discover the superior merit of the following "*first-rate* varieties of apples for a select garden:"— Juneating, Boston Russet, Franklin's Golden Pippin, Sweeny Nonpareil, Fraser's Pippin, Brabant Bellefleur, Sugarloaf, Sam Young, Downton Pippin, Grey F. Reinette, &c.; hardly any of which are to be found in the most respectable nurseries, where, however, such sorts as the following, with many more as good, are to be had: — Red Quarrenden, St. Julien, Pomme d'Api Gros, Nonesuch, East Grinstead, Salopian Pippin, Hollandbury, Margil, Wyker Pippin, Fearn's Pippin, Flower of Kent, Christie's Pippin, more valuable than the Beauty of Kent; Kirke's Lord Nelson, Yorkshire Greening, much better than Northern Greening; Loan's Pearmain, Rymer, Carlisle Codlin, Bringewood Pippin, Kentish Broading, Kentish Fill-basket, Golden Knob, Red Astracan, Cole Apple, Red and white Ingestrie, Herefordshire Pearmain, Devonshire Redstreak, Nonpareil Russet, &c. &c.

It seems extraordinary that the editor of the *Pomological Magazine* should only recommend the Elton as a heart cherry, which is generally thought a tender fruit, to the exclusion of the old Black heart (a hundred of which will probably always be planted for one Elton), the Ox heart, Bleeding heart, and Florence, &c. The lists in general are scanty and meagre. The Horsforth Grape, being a shy bearer and a bad setter, and not being remarkable for flavour, seems not worth recommending. The Isabella must be a very prolific lady to bear three times in a year. Padley's Pippin has been frequently described. The fruit of the Reinette Grise is excellent in France, but does not arrive at the same perfection here. — *A Nurseryman. Feb.* 1830.

The Pomological Magazine. — The editors of the *Pomological Magazine* err greatly, when they say that the Newton is the best of the American Spitzembergs. Besides the Newton, I know of none except the Æsopus, the Pownal, the White, and the New, or Jonathan. Of these fine varieties the Newton is unquestionably the poorest apple; indeed, so inferior do I consider it in the scale of fine fruits, that we have never propagated it in our nursery, although it is growing in my grounds. — *Jesse Buel. Albany, Dec.* 20. 1830.

The Monteath Pear Tree at Ormiston. — Sir, Allow me to allude to Vol. VI. p. 495., in which Mr. Gorrie gives an account of a jaunt he had made in the Lothians. Among other things, Mr. Gorrie mentions the Monteath pear tree, in the garden at Ormiston Hall, and says, that the original tree is growing, and is supposed to have stood three centuries;

adding, that tradition says it was named after a gardener who lived in that place, and raised it from seed.

Now, Sir, although I am not personally acquainted with Mr. Gorrie, and would by no means hurt his feelings, yet I must say that it is far from probable, nay, I am almost certain that the facts are not as above supposed. I have been acquainted with the tree alluded to for forty-one years, and my father-in-law, whom I succeeded as gardener at Ormiston Hall, knew the tree since 1756, seventy-five years ago, and could learn nothing of its history. I have also conversed with many old people of the place about this tree, who remembered it nearly a century ago, and no such account as the one given by Mr. Gorrie was ever heard of. Besides, the noble proprietors (the Earls of Hopetoun) were particularly anxious to learn any history of the fruit, and likewise of the venerable tree; and if any means could have been found to throw light on the origin of the sort, it would not have been overlooked. In corroboration of the estimation in which the fruit of the Monteath pear was held by the Earls of Hopetoun, the following anecdote may be related: — In 1776, John, Earl of Hopetoun, proprietor of the Byers estate in East Lothian (formerly a seat of the Earls of Lindsay), let the garden of the old mansion house of Byers at the rent of five pounds yearly, with this provision, viz. that he should have the produce of two Monteath pear trees, then in the garden, at a fair price. The tenant sent the fruit to Ormiston Hall, and charged seven pounds for it. Provoked at this exorbitant charge, the earl doubled the rent of the farm, making it ten pounds, no inconsiderable sum sixty-five years ago. It may be remarked that this same garden was let some time since at seventy pounds per annum.

I have myself tried every method, from the oldest publications on gardening, and other sources, but could make little of the history of this fruit. I at last learned that there was a larger tree of the sort than the one at Ormiston Hall, at Cramond House, the seat of the Dowager Lady Torphichen, six miles from Edinburgh, the trunk of which is at present 10 ft. in circumference, while the one at Ormiston Hall is little more than 7 ft. 6 in.; from which it appears that the one at Cramond must be the senior. Allow me to make an extract of a letter from Lady Torphichen, at present lying before me, dated Cramond House, Oct. 1830: — "Lady Torphichen is extremely sorry that she cannot give any very satisfactory information with regard to the Monteath pear tree still remaining in what was called the Bishop's Garden at Cramond. Mr. John Wood's *History of the Parish of Cramond* mentions Cramond as having been a favourite residence of the Bishops of Dunkeld, as far back as the year 1100 down to the year 1500, and upwards: in 1624 Sir John Inglis purchased it. The Monteath pear is not the only pear tree still standing in what was called the Bishop's Garden, though all of them are in a very decayed state, apparently from extreme age."

I should not have been thus particular about the Monteath pear, if I had not considered the account given of its being a seedling produced at Ormiston Hall as altogether without foundation; and if I had not feared that, from its having been recorded in your Magazine, it might pass current in the country. A tree of the Monteath pear was sent from Messrs. Dickson and Co.'s nursery, Leith Walk, Edinburgh, and planted in the Horticultural Society's garden at Chiswick, where it can be pointed out by Mr. Thomson, superintendent of the fruit department. The young trees grow upright, with strong young shoots, rather round dark green leaves, and have a very different habit from the old trees. I am, Sir, &c. — *James Smith. Hopetoun House Gardens, Feb.* 15. 1831.

British Species of Oak. — A. G., in his review of Mr. Billington's pamphlet on planting (Vol. VI. p. 674.), seems to be under some confusion about our British oaks; he says he "shall conclude his notice with the following extracts concerning Quèrcus pedunculàta, and sessiliflòra, or Ròbur." Our two species are *Q. Ròbur* and *Q.* sessiflòra; and it is the former, not the latter, which is sometimes called pedunculàta, to distinguish it from sessiliflòra, which is not pedunculated. From A. G.'s words he seems to consider *Ròbur* a synonyme of sessiliflòra. — *B. Coventry, Feb.* 1. 1831.

The Stoneless Berberry. — In your *Encyc. of Gard.*, you say, "it is only found without stones when the plant has attained considerable age, and is on a poor soil." There are many plants here, both old and young, and on a very rich soil, in full bearing, which have never produced fruit with stones. Perhaps they are a variety, being called here the Maiden Berberry. — *Id.*

Mr. Errington's Method of managing his plethoric Peach and Nectarine Trees. — Sir, I am one of those gardeners who have changed situations, and taken to a lot of trees troubled with the same disease as those of Mr. Errington. I read his paper with great interest, as he seems to have hit upon a proper method for reducing his decayed trees to a proper standard, or, more properly, to a fruit-bearing state. Nevertheless, though Mr. Errington has hit upon a proper method, yet I hope he will pardon me for offering a few remarks upon it, to prevent young gardeners (though not a very old one myself) from being drawn so far into that "root-cutting" system, as I think his paper is calculated to lead them; though I hope to speak feelingly with Mr. Errington, and all gardeners who are or have been troubled with the disease in question. I came here nearly three years ago, and found the peach and nectarine trees, the first year, not only to make wood strong enough for basket-rods, but strong enough to make bows and arrows for Robin Hood and Little John. Some of their shoots gummed and died, which is generally the case under such circumstances; and, like Mr. Errington, I could not tell how to prune the trees so as to bring them the soonest into bearing. However, I determined not to cut their roots (and I beg to say that the cutting off the roots is not new, as Mr. Errington and others have thought), but to give them room to spread themselves, feeling confident that by so doing, and keeping that enemy, the knife, off them as much as possible, I should bring them into bearing.

Though my trees are not to be compared with the description which Mr. Errington gives of his, yet I durst have shown crops of fruit this last year, either with him or any other person in the kingdom. My trees are planted too near each other; I think of taking some of them away, to give room for the others; and should I stop with them three years longer, I anticipate some very large trees. I do not wish to be understood to say that Mr. Errington's system will not bring them into bearing: far from it: I believe that it is almost certain of doing so; and trees so treated may last and bear very well for a number of years, in soils that will not cause their roots (those that are cut) to grow carbuncles, and of course to send up suckers: and in cases where pears and other fruit-bearing trees have not room for their branches in proportion to the strength of the border in which they grow, I think the cutting off their strong shoots is indispensable. But I here beg to ask Mr. Loudon, if he thinks that peach, or any other fruit-bearing trees (providing localities were the same), docked of their strong roots, are calculated either to make as fine trees, live as long, and bear as much fruit, as those trees whose roots are left in their natural state. I agree with Mr. Errington and others, that the border is the proper place to manage them; and I consider it just as nice a point to make a border neither too rich nor too poor, as Mr. Loudon mentions in his *Encyc. of Gard.*, p. 1104. art. Forest Pruning; in which he states, "it must be a very nice point, therefore, to determine the quantity of branches or leaves that should be left on each tree." There appears to be some misunderstanding between Mr. Errington and Mr. Seymour. I saw Mr. Seymour's trees six years ago, and can assure Mr. Errington that his trees are neither more nor less than he has described them in the Gardener's Magazine. I noticed his border, and thought it was rich; the borders that his young trees were planted in were, as I thought, very much so, on a moist subsoil: not that I examined the subsoil, but as Carlton is situated in a level part of the county, and not far from the banks of the river (Ouse?), one may rather conclude that it is moist and sandy. There is no system of training, which I am acquainted with, so well adapted as that of Mr. Seymour for a good border; because the gardener has the power of exhausting it in making profitable wood, whereas in the old system it would, in all probability have been to be cut away; should the side-branches be too weak, and the leader too strong, he has the chance of raising the former into a more erect form, and thus making them receive some of the sap, which otherwise would be propelled into the leader, and *vice versâ*. Though I have said thus much in favour of Mr. Seymour's system, he is a person that I never saw but once: his son went round the garden with me.—*John Pearson, Gardener to W.L. Childe, Esq., Kinlet, near Bewdly, Salop. Dec.* 6. 1830.

Normandy Cress. — Sir, It is rather remarkable that this vegetable should have been in England nearly fifty years, and not generally known to the present day. Mr. M'Intosh deserves the thanks of all practical men who are not acquainted with the good and useful properties of this species of cress. His paper on the subject will probably lead to a more general culture of that valuable salad herb, the history of which is, that some time before the close of the American war (1783) most of the French and other captive officers were placed on parole at and near Bath; and to them we are indebted for introducing several good vegetables, particularly Normandy Cress, Bath Cos Lettuce, and Brussels Sprouts. I saw some plants of each kind growing in a gentleman's garden in Northamptonshire, who had just received them from his friends at Bath: this was in the year 1783. The next time I saw it was in the garden at Bulstrode, in 1789, whence I obtained some seed; and I have cultivated it ever since. The late Mr. North, nurseryman at Lambeth, had seed of it from me, and put its name in his catalogue about the year 1794. Mr. Malcolm of Kensington has its name in his catalogue at the present time. A nurseryman of Newark sent me some seed of it last month (Jan. 1831.) as a new and valuable salad herb, just imported from Brussels, by a nobleman of that neighbourhood.—*J. Thompson, sen. Welbeck, Feb.* 1831.

ART. VI. *Queries and Answers.*

GARDENS of Scotland, for the Statistics of the Encyclopædia of Gardening. — A friend from the neighbourhood of Edinburgh has written to us, recommending the following list of gardens, with the names of the gardeners to whom we should apply:

Dalkeith Garden, Mr. Macdonald.
Dunmore Park, Mr. Taylor; the finest collection of fruit in Britain.
Edmonstone, Mr. M'Naughton.
Donebristle, Earl of Moray, Mr. Kelly or Mr. Gavin.
Raith, Mr. Norvell.
Wemyss Castle, Mr. Simpson.
Woodhall, Mr. Henderson.
Scone, Mr. Beattie.
Dunkeld, Mr. Rose.
Kinfauns, Mr. Roberston.
St. Martin's, Wm. M'Donald, Esq. gardener's name unknown.
Lynedoch, Mr. Hosie.
Methven Castle, Mr. Bishop.
Gordon Castle, Mr. Saunders.
Cullean House, gardener's name not known.
Fyvie Castle, gardener's name not known.
Barcaldine, gardener's name not known.

Instead of writing privately to these different gardeners, we take this mode of addressing them or their employers, and stating that we should be most happy to receive descriptions of the gardens and residences named, and of such others as may be deemed worthy of notice. It would be very desirable if, in addition to descriptions, such bird's-eye views of the residences could be sent us as are given in the *Encyc. of Gard.* p. 71., and p. 371., fig. 352. second edition. As such views can only be prepared by a clever artist, it is not expected that gardeners can supply them; but we trust some of their masters will not consider it too much to render this service to the gardening world. The descriptions or views and maps will be first given at length in this Magazine, and afterwards abridged and inserted in the statistics of the *Encyc. of Gard.*—*Cond.*

Specific Gravity of Fruits and Roots.—Doubtless some of your readers have tried the specific gravity of various kinds of fruits and vegetable roots; I presume a table of this kind would be very acceptable.—*B. Bevan. Leighton, Feb.* 7. 1831.

Undoubtedly, and we should be greatly obliged to any correspondent who would supply information of this kind.—*Cond.*

Preserving Botanical Specimens.—I should be greatly obliged to any one who would inform me, through the medium of the your Magazine, of the best and most economical method of preserving botanical specimens.—*G. J. P. Nov.* 4. 1830.

The best plain short Treatise on Gardening.—A short time ago, one of my acquaintances wished to know if there was any plain and short treatise on the simple elementary parts of practical gardening; such as might enable very young persons, without any other guide, to cultivate a small spot of ground. Such a work would have a twofold value, it would give an inducement to young persons for taking healthful and rational exercise, and produce at the same time a taste for reading. Such a treatise may be considered below the notice of a professed gardener; but would doubtless be well received in the country.—*B. Bevan. Leighton, Feb.* 7. 1831.

Mawe's *Every Man his own Gardener*, or Cobbett's *English Gardener*, may be referred to.—*Cond.*

Porcelain Labels.—In Part II. of your *Illustrations of Landscape-Gardening*, you mention what I think a very ingenious plan for placing porcelain plates in sunk panels, on the tops of brick-like wedges of terro-metallic composition. Are you aware of the best mode of writing and fixing the names on the porcelain plates? I recollect asking Mr. Duff some years ago how this was done, and I think he told me that the generic names, which are black, were written with Indian ink mixed with spirits of turpentine; and that the specific names, which are red, were written with Venetian red and the same spirits. These labels I understand did very well in the green-house; but in the stoves the heat and moisture obliterated them. I believe there is a better way of fixing the names, independently of the mode adopted by Mr. Boursalt of burning them in; but with this mode I am unacquainted. Perhaps some of the china manufacturers could inform you. By the way, I think you ought to give a panoramic view of Britton Hall in your *Illustrations.* The noble domical hot-houses, and the gardens rising one above another, would form one of the finest things of the kind I know. —*F. N. B. Newark, Jan.* 1831.

We sent to Messrs. Spode, from whom we have at different times purchased china labels and other articles; but they declined giving us the information requested. We have no doubt there are other china manufacturers disposed to act more liberally; and we should be glad to receive the information sought by our correspondent.—*Cond.*

Pump for raising Cow Urine from a Tank into Carts.—Which is the best kind? Buchanan's, Siebe's, or whose? Where can the best be obtained? —*A Constant Subscriber. Durham, Jan.* 31. 1831.

Shalder's fountain pump; which may be procured through Weir, Oxford Street; or Cottam and Hallen, Winsley Street. — *Cond.*

Destroying Aphides. — J. P. wishes to inform N. T. that, though he believes there are as many varieties of aphides as there are species and varieties of plants which they feed upon, yet that tobacco water will kill them all; and, if applied warm, will kill them the sooner. — *Dec.* 6. 1830.

How to cultivate a small Garden. — Sir, My *garden* (smile not, I beseech you) is about 50 ft. long by 15 ft. wide, situated between walls 6 ft. high; it contains three beds and two borders, and runs in length from east to west: at the west end stands the house; consequently, I have one sunny wall, and the other entirely shade. The soil appears to be little better than a sandy gravel; and from the wretched state it is now in, it must be worked over entirely afresh. But now comes the question. How am I to proceed? what compost use? what seeds sow? what roots plant? what flowers procure? what plan pursue to have a gay parterre and fine flowers? — for to have them I am determined. To you, then, I look for advice and assistance in laying out the beds to the best advantage, improving the soil in the best and most economical manner, and procuring plants and seeds best adapted to the situation; and I do assure you that I shall esteem it a particular favour if you will give me the necessary advice in a detailed manner in your next Number, as the season is fast approaching when gardening operations must commence. I am, Sir, &c. — *Philoflora. Chelsea, Jan.* 18. 1831.

The details required would be too tiresome, and not of sufficiently general application. Philoflora should consult Mr. John Simper of the Moravian Burying-ground, King's Road, Chelsea, who is an experienced gardener, possessing both skill and taste (*J. D.* for *Cond.*): or let him walk into every nursery within his reach, and read such gardening books as he can pick up. — *Cond.*

Requisites for a Country Residence in the South of England. — Sir, I am induced to intrude upon you in consequence of the handsome manner in which you have replied to P. C. H. in your last Magazine; being precisely one of those individuals who belong to the class your correspondent describes, and being obliged to quit Suffolk for a warmer climate. I should therefore feel grateful to any of your readers who would kindly answer the following queries as it respects Dorset, or Devonshire, or Cornwall. What would be the rent of a house with four rooms on the ground-floor, besides kitchen and wash-house, and six sleeping-rooms, with a garden, and about five or six acres of land, in a dry and airy situation, in a village, or within five miles of a market town, with the nature of the soil; also at what price such a small freehold estate could be purchased; the mean temperature of each month; the price of daily labour, as it regards husbandry, carpenters, and bricklayers; the state of the poor rates, both as it relates to the poundage and the general rate of assessment; the price of meat and coals, or firewood; the general face of the country, as to humidity or dryness; the price of live stock; whether clay and lime are abundant, with the price of bricks? The above information, I doubt not, would be thankfully received by many besides myself.

Allow me to trespass a little further upon your kindness, and at the same time that I return you my thanks for the list of choice fruits inserted in your last Number, to suggest that you would be conferring a lasting obligation upon hundreds, if you would take the trouble to point out where such fruits can be obtained true to order. [At present, we believe, only in the form of scions from the Hort. Soc.] The price is little in consideration compared with anxiously watching for three or four years, and then discovering that, instead of the finest, you are cultivating the most inferior sorts. I assure you I speak feelingly; as, when I laid out my present garden, I ordered sixty trees from one of the first nurseries in Norfolk, and made price no *object.* Yet not twenty of them produced fruit according to that order. I have since applied in London, with no better success, having received trees of the Early Anna, instead of the Royal George, and Padley's new Peach. Any information upon the foregoing subjects would greatly oblige. I have been anxiously expecting further communications from Mr. Hayward, which I can assure you would be grateful to many in this quarter, though we shall probably criticise some of his opinions hereafter, when they are more fully stated. Yours, &c. — *S. T. Ipswich, March*, 1831.

Cropping a new Garden. — Sir, I have lately formed a new garden, which is nearly square; the walls facing the south being 105 yards long, and those facing the east being 92 yards long. As much hereafter must depend upon the first disposition of this garden, with regard to the situation of the crops which remain in the ground for several years, perhaps some of your intelligent correspondents would assist me with their advice. Independently of the ground contained within the walls, there is a wide border on the outside of the south and east walls. The wall trees are already planted, and forcing-houses for grapes and peaches are in a state of forwardness. I am, Sir, &c. — *H. Monmouthshire, March* 6. 1831.

Amateur Gardeners and Babes in Floriculture. — If we were to comply with the requests which are frequently made by readers who, without meaning the slightest disrespect for them, may be included under the above designations, it would be merely to reprint books which they may purchase in a separate form, such, for example, as Mawe's *Every Man his own Gardener*, Cobbett's *English Gardener*, &c. " A Lady Florist," who dates Ireland, Dec. 13., says: — " I have made a large collection of valuable shrubs, and have been guided chiefly by your Magazine, &c.; which has of late become so scientific and aristocratic that it fails to assist me." The Magazine is not intended to assist in matters which are already treated of in popular works on gardening, but rather as a repository for what is new or less generally known. — *Cond.*

Application of hot Water to the Growth of Cucumbers, Melons, &c. — Sir, A correspondent of yours (Vol. VI. p. 233.) requests a paper respecting the application of hot water to the growth of melons, cucumbers, &c. Having had some conversation, in May, 1829, on heating by hot water, with a friend of mine, a gardener in this neighbourhood, I conceived that the plan might be applied to the raising of cucumbers, of which I am very fond. Having a pit, about 18 ft. long, ready built, I determined on trying the experiment, which I have done with the greatest satisfaction to myself and my friends. I have taken some trouble in ascertaining the quantity of fuel consumed, which I find a mere trifle in expense. I made my boiler of copper, and the pipes of patent malleable zinc, which is cheaper and more durable than any thing else. I began again this year on the 13th of March, and cut fruit on the 1st of May; my plants continue to bear and look well, having been cut back twice or thrice. The consumption of coal does not at present amount to half a peck in a day and night. I will undertake to make a boiler of copper, and the pipes of zinc, in such a manner as will completely answer for a pit 18 ft. long, at the moderate price of six guineas; and, if any gentleman wishes it, I will give him a plan for a small compensation, being myself a working coppersmith, &c. I can also fit up iron boilers and cast-iron pipes for heating, if required. If you will be kind enough to insert this in your Magazine, I shall feel obliged, and remain, Sir, &c. — *John Hulls, sen. Wycombe, Aug.* 1830.

Squirrels barking Trees. — Early in the month of May last, it was discovered that several of the beech and hornbeam trees in the woods near the mansion of John H. Wynne, Esq., at Caed Coch, near Abergele, North Wales, were partially stripped of their bark. A circumstance so unusual caused great curiosity to know the cause, and various were the conjectures relating to it. Some thought it was the work of vicious persons; others suggested that it might be disease; but from the appearance of pieces of bark which lay under the trees, and the ragged uneven edge of the bark on the trees, I at once concluded that it must be the work of some vermin; and my suspicions very justly rested on the squirrels. A strict watch was kept, until a squirrel was seen tearing the bark off a fine beech, in stripes of from 2 to 7 in. long. The question then was, how to prevent the further spoliation of the trees; and for that purpose I made a mixture of tar and grease, with which I had all those trees anointed on which the squirrels had commenced their destructive operations. However, I could not tell that it did much good, as, when under-bark grew firm, they desisted entirely. This was about the middle of July.

Upon the whole, there were above 100 beech and hornbeam trees barked all round, from 3 to 6 ft. in height. It appears to me, that the object of the squirrels was to procure the tender under-bark as food; but of this I am not certain, and should therefore be glad to have the experience and opinion of others upon this subject. I am, Sir, &c. — *Wm. Wynne. Bayswater, March* 14. 1831.

Urània specìòsa. — Can you or any of your readers inform me whether this noble vegetable has been seen in a state of nature by any English botanist? — *Musæus. Jan.* 1. 1831.

The Genus Erìca. — Sir, In looking over the list of *E*rìcæ furnished to you by Messrs. Rollinson, together with the months in which they flower, and also Mr. Dunbar's list, I find the former to consist of little more than half, and the latter wanting upwards of one hundred, of the number published in Sweet's *Catalogue:* may I therefore beg to ask, through the medium of your Magazine, if the lists furnished by these gentlemen comprise the whole of the sorts worth cultivating; or if there are any, not noticed in the above lists, that it would be desirable to possess in a collection, and also where they are likely to be procured?

I do not observe *E*rìca tortuliflòra in either of these lists, or in Sweet's *Catalogue*, 1st edit.: as I have no opportunity of seeing the second edition, may I also request to be informed if it is one lately introduced, or has it been sold to me under an improper name? I cannot but express my surprise that this most delightful and interesting genus is not more extensively cultivated. In how few collections of plants do you find the *E*rìca! and yet I know of no genus where you have so much variety, both with respect to flower and foliage; indeed, there is not a month in the whole year that you have not very many of the species in bloom. I can only account for this indifference to a genus so much deserving of attention, by the supposed difficulty of cultivation; this, I think, is more imaginary than real, which a very little experience will prove. It is perfectly true that some of the species are very apt to go off; but there are a great many, such as the vestìta, ventricòsa, ampullàcea, and several others which I could name, that are as easily kept as any plants I know. I would therefore most earnestly recommend to those who have green-houses, to begin with a few of the more hardy sorts: should any of your readers be induced to follow my advice, they will, I have no doubt, be soon disposed to extend their collection, and will find ample reward for any expense or trouble, in the additional favour which this genus never fails to find in the eyes of all lovers of plants. I am, Sir, &c. — *E. London, Jan.* 6. 1831.

Indigenous Erìcæ. — I should be greatly obliged to any one who would inform me how many *E*rìcæ are natives of England, and favour me with their names, and short descriptions. — *G. J. P. Nov.* 4. 1830.

P*olýgala vulgàris of different Colours.* — I find on a neighbouring common the *P*olýgala vulgàris; the flowers are of four different colours, viz. dark blue, light blue, red, and white; the leaves are a darker or lighter green, in proportion to the darker or lighter colour of the flower. Are these four different varieties? or are they all the same? If so, what is the cause of the change in colour? — *Id.*

*Propagation of Thunbérg*ia *alàta;* in reply to "A Constant Reader."

(p. 123.) — Cuttings of this plant may be struck with tolerable success during the whole year; but the most favourable season is in March and April, when they will strike root, and be fit to pot off in three weeks after they are put in. When plants are turned out into the borders, they set during summer an abundance of seeds, and in favourable seasons ripen a part of them. To produce seeds in the house, the plants should be placed in an airy situation, and the impregnation of the pointals effected by the help of art. It is rather singular that this beautiful climber is so scarce, considering how easily it is propagated, and how frequently it ripens abundance of seeds. The Maurándy*a* Barclay*àna*, another beautiful climber, will probably prove hardy enough to endure our winters out of doors, in sheltered gardens near the sea coast, as a plant survived last winter in a garden near Falmouth. — *A. X.*

Retarding the Flowering of the Lilac. — In Vol. VI. p. 229. the lilac is mentioned as to be met with in full perfection in Paris, in the months of August and September. Your correspondent I. H. asks whether we have not the same means of retarding its flowering, or whether it may not be a different variety which they cultivate at Paris. As I presume that some of your numerous correspondents will be abler than I am to give a more satisfactory account, I shall only observe, in the mean time, that, according to your *Hórtus Británnicus*, all the species of *Syrínga* flower in May or June; and that, if any variety existed at Paris so different as to flower in August and September, it is more than probable the British nurserymen would have obtained it before this time. We may therefore conclude that the lateness of flowering must be owing to some artificial means. I am of opinion that in some seasons we possess those means in an intense degree; and this, I presume, from having been informed, several years ago, that at Paris they retard the Persian lilacs by placing them in an ice-house. I am not acquainted with the time and manner of depositing them; but, on account of the fragrance and beauty of these shrubs when in flower, some who have an opportunity may find the experiment worth trying, especially in the neighbourhood of London. Similar treatment may probably be advantageously extended to some other things. Hoping to be favoured with more particular information on this subject through your Magazine, I remain, Sir, &c. — *M. N. Nov.* 1830.

Lost or missing hardy Bulbous Plants. — Sir, Since you published, in your Number for July last (Vol. VI. p. 368.), my account of the lost or missing hardy bulbous plants which were so successfully cultivated in the English gardens two hundred years ago, I have ascertained that the *N*arcíssus autumnàlis mìnor, there mentioned, is the Amarýlli*s* lùtea of *Linn. Sp. Pl.* ed. 2. p. 420.; and is actually the same as the specimen so named and yet preserved in his herbarium; and that the *N*arcíssu*s* autumnàlis màjor of my said list is Amarýlli*s* lùtea of Curtis, in *Bot. Mag.* tab. 290. Both these plants I now possess alive. They belong to the modern genus Oporánthus, and the latter should retain its ancient specific name of màjor. I am also assured that the pure yellow fritillary of the aforesaid list yet exists in the botanic garden at Liverpool. Further than the above, the missing plants remain in the same obscurity as before. — *A. H. Haworth. Chelsea, March* 7, 1831.

Double Cowslip. — In your Magazine for February (Vol. VII. p. 123.), I observe a reply by Mr. Errington of Oulton Park, relative to the double cowslip; about which I made enquiries in a former Number of your Magazine. (Vol. IV. p. 446.) Mr. Errington says that he has obtained the plant from a cottage garden, as double as a rose. I now beg to inform him that, soon after my query appeared in the Magazine, I was favoured with a plant of the double cowslip (the true "double paigles" of Parkinson and Gerarde), by the kindness of Mr. Spurgin of Saffron Walden, who sent it to me in flower. As it is very possible that Mr. Errington's cowslip may be a somewhat different variety from the Saffron Walden one, if he would have the goodness to supply me with a root, I shall be happy in return to give him a plant of the one in my possession; which I have no doubt I shall be able to do after the flowering season in the ensuing spring. Yours, — *W. T. Bree. Allesley Rectory, near Coventry, Feb.* 5. 1831.

The Pine-apples at Castle Semple, planted in Beds of Earth. — I have seen this mode tried many years ago, but never found it answer; probably, however, from the plants being placed too far distant from each other, and from their not being allowed to fruit their suckers, and the suckers of their suckers, as one of your correspondents (Vol. V.) says is done in the Royal Gardens at Munich. Can any one in the neighbourhood of Castle Semple inform me of the present state and future prospects of the pine plants there? — *H. B. Reid. Glamorganshire, Oct.* 1830.

How can Grapes be best and longest preserved after they are cut? — I have many vines under my care, and am expected to supply grapes at table as long as possible: I consequently allow them to hang longer on the vines than is right they should. Anxious to learn the very best mode of keeping grapes after they are cut, I communicate my present mode, that its defects may be perceived and amended by some kind correspondent knowing a better. I save the Syrian till last: the Hamburgh and other kinds were last year ripe at the end of July, and were not all cut till December 2. The Syrian, which I never cut till perfectly ripe, I cut about the 10th of December. I then procured some clean sand, and dried it by the fire, till it would pass through a fine hair sieve. The grapes and the sand being dry, and the sand become cold, I took a shallow box, and having separated the shoulders from the main stalks of the bunches, I placed them in the bottom of the box; pouring the sand well in among the berries, so as to prevent as much as possible any two berries from touching each other. I then placed the box in a warm dry room; and by these means I have kept the grapes this season for above two months from the time I cut them, as I only finished the last of them yesterday; and they were acknowledged, by those who partook of them, to be as good as when put into the sand, except that the stalks had turned brown. Yours, &c. — *E. S. Feb.* 14. 1831.

The Soil in which Mr. Seymour's Peach Trees are grown. — In answer to Mr. Errington (Vol. VI. p. 695.), I have to inform him, that our soil is a light sandy loam, about 18 in. deep, upon a very dry open gravel; and that, in planting young peach trees, I generally trench in a considerable quantity of good dung, and annually give the borders a dressing of the same kind of material, although I must allow that I occasionally give them a dressing of strong loam upon the surface. With regard to luxuriant wood as a matter of choice, I never consider a 6 ft. shoot as too strong in the centre of my young trees. If these be treated as shown in the correct figure (Vol. II. p. 295.) or the imaginary one (Vol. VI. p. 436.), they will seldom be found to produce strong shoots in any other parts of the trees; but should they appear inclined to do so, and the shoots lie well, so as to be made future leading branches, they may be retrained; but, if not, it is easy to remove them, and the sap will be diverted to some more useful purpose. But I must confess that, had Mr. Errington given the same information respecting the distance his trees were planted apart, in his letter in Vol. VI. p. 54., as he has in the letter in p. 695., my observations would have been of a very different nature, and directed to a different point; for I consider 9 or 10 yards as the most convenient distance for peach or nectarine trees, although there are in Carlton garden trees of those kinds completely covering from 10 to 15 yards of a 10 ft. wall.

With regard to Mr. Errington offering to show his wall of trees against any of the same age, he must recollect that very few gardeners have the good fortune to have so fine a wall under their care: but I beg to inform him that, should he or any of his friends ever come to Carlton, my father and myself would be glad to see them; and perhaps we should be able to show them trees from five to thirty years old, and all of them well supplied with good bearing wood of proper strength (see Mr. Craig, Vol. VI. p. 431.) in every part of the tree, and some of them producing annually 500 good fruit fit for any nobleman's table. I remain, &c.— *William Seymour. Carlton, near Snaith, Feb.* 22. 1831.

Why Peas boil hard.— Sir, Your correspondent J. M. (p. 125.) wishes to know the cause why peas boil hard. I suppose he means, when dry, for soup. The cause is, I believe, their being too old; I mean, more than one year old; as all sorts of peas which I have tried for that purpose boiled tolerably well until they were one year old. After that age they do not break well, not even the best boilers; and I have seen Knight's crumpled marrow and the blue Prussian, at three years old, boiled for twelve hours in soft water, and in an iron pot (which one would suppose is iron enough, if that metal would affect them), and they would not break nor bruise kindly when beaten in a marble mortar with a wooden pestle. From this I consider the cause of hard boiling peas to be age, even if they are split. So far *probatum est.*— *W. Hurst. Wandsworth Road, Feb.* 1831.

The Pink-eye Potato of Wales.— Sir, Can any of your correspondents inform me if the potato, cultivated almost universally in North Wales, called pink-eye, be rightly designated? There is, I believe, both the early and late pink-eye. It is a most excellent potato, and I understand a good bearer. I am about to plant, in the south of England, a few given to me in my rambles last summer by the reverend host of the inn at Capel Cerrig; should they prove as excellent at the table in the south as I found them almost universally in the mountains, I will communicate the particulars of the culture, &c. Yours, &c.—*J. S. Feb.* 1831.

The Surinam Yam, or large Cattle Potato.— Where can it be procured? I have sought the same in London, but in vain.—*A Constant Subscriber. Durham, Jan.* 31. 1831.

Of any Edinburgh seedsman, say Lawson, seedsman to the Highland Society. — *Cond.*

Prussian Asparagus, and preserving green Kidney Beans.— The Caledonian Horticultural Society, among the articles for which they offer prizes, have the two following:— For an account of the mode of dressing for the table Prussian grass, or the unexpanded flower-buds of Ornithógalum pyrenàicum, as practised in the neighbourhood of Bath. For an account, founded on experience, of the mode of keeping haricots verts, or kidney-beans, green in the pod all the winter, as practised in Germany. We request our valued correspondent Mr. Capper to throw some light on the first subject; and M. Hertz of Stuttgard will, we have no doubt, attend to the second. — *Cond.*

Distillation of Spirit from Grasses.—" The excellent spirit procurable in great quantities from the various kinds of grass is singularly overlooked; while considerably more valuable materials are sacrificed in abundance for the same end. In Kamtschatka, the value of grass for this purpose is duly appreciated. It is a peculiar kind, which, when allowed to heat by lying in heaps, evolves sugar just as barley would do, although by a very different process. It is then mashed with hot water, fermented, and distilled. A spirit is thus produced which is highly prized by the natives." (*Lardner's Cycl., Domestic Economy*, vol. i. p. 251.) What is the kind of grass here mentioned? The roots of the couch, and the stolones of the fiorin, have also, according to this account, been tried with success by two eminent chemists. Might not the runners of the strawberry or the cuttings of fruit trees be rendered similarly useful? Dr. Macculloch is also stated to have observed, "that chemical examination has proved the young shoots, tendrils, and leaves of the vine to contain substances precisely similar to the crude fruit. Experiments were therefore instituted in France, and repeated here with success; the result of which has been, that, from vine leaves, sugar, and water, wines have been produced in no respect differing from the produce of the immature fruit." Can any thing like cider or perry be obtained from the young shoots of the apple or the pear?—*J. C. Near Alnwick, Dec.* 1830.

ART. VII. *Horticultural Society and Garden.*

JAN. 4. 1831. — *Read.* A Report upon the varieties of Pine-apple cultivated in the Garden of the Society; by Mr. Munro, F.L.S., gardener (concluded). The Meteorological Register kept in the Society's garden for the month of December.

Exhibited. A variegated Waratáh Camellia, from John Allnutt, Esq. F.H.S. Bezi de Caissoy Pears, from Mr. James Young, F.H.S.

Also, from the Society's Garden. Thirty-one sorts of Apples, ten sorts of Pears, Flowers of Chimonánthus frágrans and var. grandiflòrus.

Jan. 18. — *Read.* An Enquiry into the Nature and Constitution of the Sap-vessels of Plants; by the author of the *Domestic Gardener's Manual.*

Distributed. Grafts of the Washington Plum, the Elton Cherry, Knight's Early Black Cherry, and Reine Claude Violette Plum.

Exhibited. A Seedling Camellia and a Carnation Camellia, from John Allnutt, Esq. F.H.S.

Also, from the Garden of the Society. Thirty-two sorts of Apples, six sorts of Pears, Flowers of Chimonánthus frágrans and var. grandiflòrus, and four sorts of Cardoons.

Feb. 1. — *Read.* A paper on the Potato; by T. A. Knight, Esq. P.H.S. &c.

Distributed. Grafts of Cherries, the Belle de Choisy and the Black Eagle. Grafts of Plums, Mimms and Drap d'Or, from the Society's garden. Seeds of the Syon free-bearing Cucumber, a very good variety of Celery, a very fine sort of Endive, true yellow Maltese Turnip, from Mr. Hugh Ronalds, F.H.S.

Exhibited. Mitcham Seedling Apples, from Mr. H. Lowndes, Cedar Cottage, Brixton. Twenty-six sorts of Apples, six sorts of Pears, Flowers of Chimonánthus frágrans, and var. grandiflòrus, from the Society's garden.

Feb. 15. — *Read.* A Report upon the Varieties of Apricots cultivated in the Society's garden; by Mr. Robert Thompson, under-gardener in the fruit department.

Distributed. Grafts of Apples, Dutch Mignonne and Reinette de Canada; Pears, Beurré Diel and Beurré Rance.

Exhibited. Eighteen sorts of Apples, from Mr. Joseph Kirke, F.H.S. A collection of Apples and Pears, from Mr. Owen of Bond Street. Garden Seats, from Mr. Hammond, Tenter Row, City Road. Flowers of Camellias, from John Allnutt, Esq.

Also, from the Garden of the Society. Thirty sorts of Apple, four sorts of Pears, and Flowers of Chimonánthus frágrans.

March 1. — *Read.* A Paper on the cultivation of the Melon; by T. A. Knight, Esq. P.H.S., &c.

Distributed. Grafts of the Iekworth Impératrice Plum, Green Gage Gooseberry, Mr. Knight's Sweet Red Currant, from T. A. Knight, Esq.

Also, from the Garden of the Society. Marie-Louise Pear, Golden Harvey Apple, Court of Wick Apple.

Exhibited. Newtown Pippins from America, by John Beadnell, Esq. F.H.S. Nine sorts of Camellias, from Mr. Chandler, F.H.S. *Leucòjum* vérnum, Forced Swedish Turnips, &c., Striped Perennial Kale, from Mr. Daniel Grant of Lewisham. Camél*lia* Reevèsii (French White Camellia), from T. C. Palmer, Esq. F.H.S.

Also, from the Garden of the Society. Twenty-two sorts of Apples, six sorts of Pears, two kinds of Rhubarb, Flowers of Crocuses, three sorts of Camellias, and Flowers of Chimonánthus fràgrans.

The Chiswick Garden, Feb. 16. — We regret to see an alteration going on in the plan of this garden, which shows a determination, on the part of the Society, not to adopt any radical reformation in its general arrangement. We regret it, because it shows a want of recourse to fundamental principles, and a disposition to apply palliatives to fundamental evils, which is generally the characteristic of indolence or ignorance. Some, who reverence all public bodies, and adopt the opinions of eminent names, from inability, disinclination, or want of leisure, to enquire into measures, may think it a species of presumption in us, to set up our notions on the laying out of this garden against those of the Council, who must have sanctioned the alteration in question. Perhaps, indeed, some may think that we are influenced by private or party motives. Let those think so who do not know us better: if private feelings could influence us, it would be to the part of silence; for, since the removal of Mr. Sabine, the officers of the Society have shown us every civility, and afforded us every information which we could desire. We are not, however, the less decided in our total disapproval of the plan of the garden; and our ideas on this subject must be known to those who have perused this Magazine from its commencement. If the whole, the half, or a fourth of a reformed plan could not have been executed in one season for want of funds, a smaller fraction might; and there would have been, to us at least, the double satisfaction of seeing work performed which would not require, at some future time, to be undone, and the prospect of the completion, sooner or later, of a plan worthy of the present state of gardening science. The money now expending in the alteration alluded to, if it had been applied as we proposed, would at least have made a beginning to a work which must certainly one day be undertaken. We will not repeat the outline of our plan, nor fatigue our readers by pointing out many of the objections to that adopted. We must, however, keep the subject alive, by now and then directing attention to a defect or a deformity. Our present essay in this way shall not be long. Let every young gardener recollect, that whatever is truly scientific must form a definite whole; the parts of which can no more be disarranged than can the steps necessary for working a problem in geometry or a question in arithmetic. On trying the plan of the Chiswick garden by this test, it will be found that it has no pretensions to the merit of being a definite whole; since any one part of it might be substituted for any other part, and all the purposes which the garden now serves be as well answered as at present. The arboretum, for instance, might just as well have been on the west side as on the east side; and the hot-house department might have been equally well in the southern as in the northern corner. But the principle we have laid down must be reflected upon by the young gardener, and applied by him to all the details of the garden, in order to understand the important consequences to which it leads. Had a scientific plan been adopted, such as that we sketched out in a former Number, no patches of common-place shrubbery or pleasure-ground scenery could have been admitted, and not a single duplicate would have been required; or, where duplicates might have been thought desirable, they could only have been allowed a place close to the original. No one species, in short, of either ornamental tree or herbaceous plant could have occurred in two different parts of the garden without a specific reason. It is truly lamentable to see thirty acres of admirable soil, and with a surface, exposure, and locality so well suited for the purposes of a scientific horticultural garden, frittered away to insignificant parts, by walks and hedges, which not only waste space, but greatly increase the labour of keeping, and totally destroy character.

We hope this garden will prove a useful example to other Societies which have not yet laid out theirs, and induce them not to be guided by any individual, however zealous he may be; but, as is generally done in the case of public buildings, to call in the aid of public competition.

In other respects, the Chiswick garden is very much to our satisfaction, and various parts of it are at this season exceedingly interesting. A few sorts of pears, and a good many kinds of apples, still remain in good preservation on the shelves of the fruit-room; and, packed in jars of dried sand and in baskets of dried fern, there are several varieties of both fruits, which will keep till pears come again. Mr. Thompson seems to find sand the best medium for preserving plumpness, but rather injurious to the flavour; and dried fern the *best* medium for preserving plumpness and flavour at the same time, in apples and pears; dried sand is probably preferable for plums and grapes.

Eighty-eight sorts of crocuses are now in bloom in the flower department, and form a most agreeable sight. We observed some fine specimens of that rare and beautiful bulb, Galánthus plicàtus, which is to the common snowdrop what the giant ivy is to the common ivy. This spring flower, and Bulbocòdium vérnum, *L*eucòjum vérnum, and *S*cílla sibírica, bifòlia, and vérna, all neat little bulbs now in bloom, well deserve a place in every garden which is to be seen in the spring months. The great object, in all gardens belonging to residences occupied by the family all the year, is to have abundance of flowers for spring and autumn, and a good stock of green-house plants which flower in the winter.

The tropical plants in the houses look remarkably well, and those with coloured leaves, such as Justíc*ia* pícta, Eránthemum bícolor, *C*ròton pícta and variegàta, *Calàdium* bícolor, Dracæ'na terminàlis, Ruéll*ia* Sabini*àna*, &c., at this season, when there are few plants in flower, have a gay appearance. Ruéll*ia* ciliàta, Streptocárpus Réx*ii* which blooms all the year, with some *O*rchídeæ and Amaryllíd*eæ*, are in bloom.

In the peach house the trees are in bloom, and we observed a sort of spatula or flap of deal board about 18 in. long and 9 in. broad, for beating the air of the house, so as to set it in motion, and disperse the farina of the blossoms. It would be an easy matter to render this operation very complete, by having several flaps suspended from the roof, say one under every other rafter, and moving the whole at once by a connecting rod of wire; or by hazel or willow rods. Any gardener might construct such a machine for himself.

The half-hardy articles which were matted have stood the winter remarkably well. Chimonánthus fràgrans is still covered with blossoms which have not lost their fragrance; and those of C. f. grandiflòrus are large and handsome, a circumstance which strongly recommends this variety. Wistàr*ia* Consequà*na*, one of the shoots of which, made the year before last, measures 60 ft. long, shows abundance of blossoms over a surface of about 250 square feet of walling. Some of the clumps in the arboretum have been obliterated, and the space they occupied levelled and trodden down so as to be as solid as the adjoining turf; and these are what is called grafted with the turf; or, in other words, set with patches of turf about the size of the hand, placed about 9 in. apart every way. This practice, which was recently brought into notice in Norfolk, has long been known among gardeners; and it has the advantage, in cases such as that before us, of not forming distinct patches of green. The turf being taken from the adjoining surface, the patch is covered with the same species and varieties of grasses, in the same degree of luxuriance as those around it; whereas, if it had been taken from some adjoining field or meadow, the grasses might have been wholly or partly of a different species or variety, or of the same species but in a different degree of luxuriance. This last difference alone would have rendered the new surface, or patch, of a different colour and rate of growth from the adjoining surface for years to come.

Notwithstanding our entire disapproval of the original plan of the garden, and of the alterations now going on, we wish never to lose an opportunity of recommending all nurserymen, not only in Britain, but in Europe and America, and, in short, throughout the world, to apply for scions and cuttings of the fruit trees and fruit shrubs grown at Chiswick; in order to disseminate in all gardens, from that of the cottage to those of the palace, the very superior new sorts of apples and pears, as speedily as possible; and also to effect a fundamental reformation in the nomenclature of European fruits wherever they are cultivated. This recommendation we shall make with more effect when the Society has published its descriptive catalogue. In the mean time we trust that all European and American nurserymen, but more especially those of our own island, who propagate fruit trees, will look forward to establishing in their own grounds specimen trees of each particular sort, from which they mean to take scions or cuttings, and that these sorts shall, to a certainty, bear the names given or approved by the Horticultural Society of London. Unless this be done by every nurseryman, without exception, who propagates fruit trees, the Horticultural Society will have laboured, in a great measure, in vain.

The practice of taking grafts from young trees in the nursery lines which have not borne fruit, has led to the confusion and error as to names, which unavoidably prevails more or less in every nursery, not only in Britain, but throughout the world, and must infallibly continue till the practice we recommend is adopted. The slightest error once committed among the fruit trees, in a nursery where the scions are taken from the lines, is perpetuated for ever in that nursery, and ramified into other nurseries and gentlemen's gardens all over the country; but an error committed among the fruit trees in a nursery where the grafts are taken from stock plants, is limited to the specific case, and only deceives one purchaser instead of hundreds and thousands. Either nurserymen must resort to the practice of grafting from fruit-bearing stock plants, or they must learn to know every variety of fruit from the wood or young shoots of the tree which bears it; a practice which, though easy enough in some cases, they will find very difficult in a great many, and almost impracticable in others, from the continual change which takes place in the workmen of every nursery establishment which supplies country gentlemen with gardeners. It is true that this mode of conducting the fruit-tree department of a nursery, by the addition of a pomarium, or orchard, will require a considerable addition to the quantity of ground employed; and will be unsafe without a greater length of lease of the soil from the landlord than what is now generally granted: but the ultimate effect of this will be, at least if the purchasers of fruit trees act with due regard to their own interest, to create a division of skill and labour among nurserymen. Many will give up growing fruit trees altogether; others will confine themselves to one or two kinds, and purchase the rest from the trade for their customers. Scarcely any nurseryman at present grows everything which he wants, even if he deals in every thing; nor is this of any consequence at all as to the nurseryman's profit or loss, since, so long as the trade between nurserymen is free, all benefits or disadvantages of this kind must be reciprocal.

Art. VIII. *Covent Garden Market.*

	From £	s.	d.	To £	s.	d.
The Cabbage Tribe.						
Cabbages, per dozen:						
White - -	0	1	0	0	1	6
Red - - - - -	0	6	0	0	8	0
Plants, or Coleworts -	0	1	6	0	2	6
Savoys, per dozen - -	0	0	4	0	1	0
Brussels Sprouts, per ½ sieve	0	1	6	0	2	6
German Greens or Kale, per dozen - - -	0	0	4	0	0	6
Broccoli, per bunch:						
White - -	0	1	6	0	5	0
Green - - -	0	1	0	0	2	6
Purple - - -	0	1	6	0	3	0
Cape (late) - -	0	2	0	0	3	6
Turnip-tops { per sack -	0	1	6	0	3	0
Turnip-tops { per bushel	0	0	6	0	1	0
Legumes.						
Kidneybeans (forced), per hundred - - -	0	3	6	0	5	0
Tubers and Roots.						
Potatoes - { per ton	4	0	0	4	10	0
Potatoes - { per cwt.	0	4	0	0	4	6
Potatoes - { per bush.	0	2	0	0	2	6
Kidney, per bushel -	0	2	6	0	0	0
Scotch, per bushel -	0	2	0	0	0	0
New, per pound -	0	2	0	0	0	0
Jerusalem Artichokes } per ½ sieve	0	1	6	0	2	0
Jerusalem Artichokes } per dozen	0	0	3	0	0	6
Turnips, White, per bunch	0	0	1	0	0	2
Carrots, per bunch:						
Old - - -	0	0	4	0	0	6
Horn - - -	0	1	0	0	1	6
Parsneps, per dozen -	0	0	6	0	1	0
Red Beet, per dozen -	0	1	0	0	3	0
Skirret, per bunch -	0	0	9	0	1	0
Scorzonera, per bundle -	0	1	0	0	1	3
Salsify, per bunch - -	0	1	0	0	1	3
Horseradish, per bundle -	0	3	0	0	6	0
Radishes:						
Red, per half dozen hands (20 each) - -	0	0	9	0	1	6
Turnip, per bunch -	0	0	0	0	0	6
The Spinach Tribe.						
Spinach { per sieve -	0	1	0	0	1	6
Spinach { per half sieve -	0	0	6	0	0	9
Sorrel, per half sieve -	0	1	6	0	0	0
The Onion Tribe.						
Onions:						
Old, per bushel - -	0	4	6	0	6	0
Pickling, per half sieve	0	10	0	0	12	0
Green (Ciboules), p. bun.	0	0	2	0	0	4
Leeks, per dozen bunches	0	0	9	0	1	0
Chives, per dozen roots -	0	1	6	0	0	0
Garlic, per pound - -	0	0	9	0	1	0
Shallots, per pound - -	0	1	6	0	2	6
New, per bunch -	0	0	6	0	0	0
Asparaginous Plants, Salads, &c.						
Asparagus, per hundred:						
Large, or Ware -	0	10	0	1	1	0
Middling - -	0	4	0	0	8	0
Small - - -	0	2	0	0	3	0
Sea-kale { per punnet -	0	0	9	0	3	6
Sea-kale { per half sieve -	0	2	6	0	3	6
Lettuce, Cabbage, per score	0	0	6	0	1	0
Endive, per score -	0	2	6	0	3	6
Succory, per bunch -	0	0	2	0	0	3
Celery, per bundle (12 to 15)	0	0	4	0	2	6

	From £	s.	d.	To £	s.	d.
Small Salads { per half sieve	0	1	6	0	2	0
Small Salads { per punnet -	0	0	2	0	0	3
Watercress, per dozen small bunches - - -	0	0	0	0	0	6
Burnet, per bunch -	0	0	2	0	0	3
Pot and Sweet Herbs.						
Parsley, per half sieve -	0	5	0	0	7	0
Tarragon, forced, per dozen bunches - -	0	0	0	0	6	0
Purslain, per punnet -	0	1	0	0	0	0
Fennel, per dozen bunches	0	4	0	0	6	0
Thyme, per dozen bunches	0	2	6	0	0	0
Sage, per dozen bunches	0	3	0	0	4	0
Mint, forced, per dozen bun.	0	6	0	0	8	0
Peppermint, dried, per doz. bunches - -	0	1	0	0	0	0
Marjoram, per doz. bunches	0	1	0	0	0	0
Savory, per dozen bunches	0	1	0	0	0	0
Basil, per dozen bunches -	0	2	0	0	0	0
Rosemary, green, per dozen bunches - -	0	6	0	0	0	0
Lavender, dried, p. doz. bun.	0	3	0	0	0	0
Tansy, per doz. bunches -	0	1	0	0	0	0
Stalks and Fruits for Tarts, Pickling, &c.						
Rhubarb Stalks, per bundle	0	1	0	0	2	6
Edible Fungi and Fuci.						
Mushrooms, per pottle -	0	0	9	0	1	6
Morels, dried, per pound -	0	14	0	0	0	0
Truffles, per pound:						
English - - -	0	10	0	0	0	0
Foreign, dried - -	0	14	0	0	0	0
Fruits.						
Apples, Dessert, per bushel:						
Nonpareils - - -	0	15	0	2	10	0
Golden Pearmains -	0	8	0	0	10	0
Golden Pippins - -	1	10	0	3	0	0
Rosemary Pippins -	0	8	0	0	10	0
Baking, per bushel -	0	5	0	0	8	0
French Crabs - -	0	10	0	0	12	0
American - -	1	0	0	1	10	0
Reinette de Coe -	0	10	0	0	0	0
Reinette grise - -	1	0	0	0	0	0
Pears, Dessert, per dozen:						
Bon Chrétien - -	0	6	0	0	0	0
Colmar - -	0	18	0	0	0	0
St. Germains - -	0	18	0	0	0	0
Pears, Baking, p. half sieve:						
Cadillac - -	0	7	0	0	0	0
Bell-shaped - -	0	7	0	0	0	0
Almonds, per peck -	0	6	0	0	0	0
Strawberries, forced, per oz.	0	3	6	0	5	0
Chestnuts, French, per peck	0	4	0	0	10	0
Filberts, English, per lb. -	0	1	6	0	0	0
Pine-apples, per pound -	0	16	0	1	4	0
Hot-house Grapes, per lb.	1	10	0	2	5	0
Cucumbers, frame, per brace	0	10	0	0	0	0
Extremely long, 24 in. each - - -	0	16	0	1	0	0
Oranges { per dozen -	0	0	9	0	2	6
Oranges { per hundred	0	4	0	0	16	0
Bitter Oranges, per hundred	0	8	0	1	4	0
Lemons { per dozen -	0	0	9	0	2	0
Lemons { per hundred	0	6	0	0	16	0
Sweet Almonds, per pound	0	3	0	0	0	0
Brazil Nuts, per bushel -	0	12	0	0	16	0
Spanish Nuts, per peck -	0	4	0	0	0	0
Barcelona - - -	0	5	0	0	0	0

Observations. — The total absence of solar heat during the month of February, and the continuance of rain through the early part of March, have, in some measure, retarded the early spring productions generally found in our markets at this season, although the prevalence of an improved system in culture goes far to remedy the deficiency. Our supplies of ordinary articles have been abundant throughout the winter, at very moderate prices. A general impression prevails that there is less consumption of vegetables in the metropolis, and consequently a depreciation in their value: from whatever cause it may proceed, there is certainly a very limited demand; and when the prices are barely more than remunerating to the growers, that limited demand, if possible, becomes less. The supply of English apples, from the deficiency in the late season, has been very small; but considerable quantities have been imported from France and Flanders, at very moderate prices, which have kept down the value of our own produce; and this will illustrate very clearly my observation; for, in consequence of the light crop, the apples of this country in the early part of the season brought high prices, which put them out of general use. After Christmas, the supply of foreign fruit being considerable, prices declined; but the consumption has not materially increased, and the sales are really nominal. The supply of forced rhubarb has been good; and is used very generally as a substitute for, and in preference to, apples. We have now a moderate quantity of English fruit in the market; but it will not pay the grower for holding over, in consequence of the decline in its price. Forced asparagus was in great demand during February; and the growers obtained higher prices than I have quoted, for a short period: but, the supply being very good, prices have declined. Pine-apples have been also wanted; and, in consequence of there being but few fine, have realised good prices. Strawberries are as yet in limited quantities, and but little looked for. Grapes are just coming in, and but little in demand at present. Sea-kale is now in great plenty, and of excellent quality; being generally cheaper than asparagus (for which it is in some measure considered a substitute); it is much in demand. The supply of Scotch potatoes has lately been good; in consequence, the prices have declined; but, as we have few to come to hand from the home districts, and as the planting season has commenced, it is probable they may be in demand and sell better. During the winter, some specimens of *Stàchys palústris* have been in the market, and sold as an esculent: to my taste it resembles in flavour, when dressed, the bottoms of the common artichoke. Brussels sprouts, a most excellent vegetable, have been more generally cultivated, and brought to market, and appear to be much esteemed. — *G. C. March* 24.

Weights and Measures. — I am surprised that the Duke of Bedford has not followed the example of the managers of Farringdon Market, and established in it an office of reference and regulation for weights and measures. It is shameful to see half-sieves, as they are called, differing in quantity to the extent of nearly 3 quarts, and yet passing for the same measure, and sold at the same price. If a person errs in weights or measures in the City market, I believe, he is immediately turned out of it. — *Henry Lowndes. Cedar Cottage, Brixton, Jan.* 30. 1831.

Measures used in Covent Garden Market. — Sir, On the part of myself and some others of your readers who reside in the country, I solicit the favour of a specification of some of the particular quantities designated by local terms, in common use at Covent Garden Market, comprised in your "List of Prices." For instance, what quantity, either by weight or number, constitutes, on an average, a bunch or a bundle of broccoli, turnips, carrots, salsify, succory, &c.? The sieve, and the half-sieve, too, are measures not generally known in the country; but if you would give the average weight of the respective articles contained in these particular measures, or the relation which these measures bear to the divisions of the imperial bushel, a better idea would be obtained, in the country, of the comparative prices of the articles. The same information relative to the sizes or capacity of the *punnet* is required. In other respects, the information given is clear and satisfactory.—*B. Bevan. Leighton, Feb.* 7. 1831.

The weights, measures, and customs of Covent Garden Market are certainly very peculiar; and it would be for the advantage of trade in every part of the country, if one general denomination and practice could be there and everywhere else introduced. The time must come, sooner or later, when one system of weights, measures, and monies will be common to Europe; and it would be easy for the British and French governments to bring this about in the course of a generation. In the meantime, we trust to our correspondent G. C. to give some explanation to Mr. Bevan. — *Cond.*

The Conservatories in this Market have been lately heated by Mr. Collins, of 14. Tavistock Row, in a very ingenious manner, which admits of conveying the heat, either by hot water or by steam, at the shortest notice, and with very little trouble to the operator. The arrangement is most scientific, and does great credit to the engineer, from whom we have received an account of it, which, with a general description of the market, accompanied by plans and views, kindly furnished us by the architect, Mr. Fowler, will add interest to, we hope, our next Number. — *Cond.*

Art. IX. *Obituary.*

Robert Brown, Esq., well known by his excellent agricultural writings, died on Feb. 14., at Drylawhill, East Lothian, in his 74th year. Mr. Brown was born in the village of East Linton, where he entered into business; but his natural genius soon led him to agricultural pursuits, which he followed with singular success. He commenced his agricultural career at Westfortune, and soon afterwards removed to Markle. Mr. Brown was a contemporary and intimate acquaintance of the late George Rennie, Esq., of Phantassie, and to the memory of them both agriculture owes a tribute of gratitude. Mr. Rennie chiefly confined his attention to the practice of agriculture; and his fine estate furnished evidence of the skill with which his plans were devised, and of the accuracy with which they were executed. While Mr. Brown followed close on Mr. Rennie in the field, the energies of his mind were, however, more particularly directed to the literary department of agriculture. His *Treatise on Rural Affairs*, and his articles in the *Edinburgh Farmer's Magazine* (of which he was conductor during fifteen years), evinced the soundness of his practical knowledge and the energy of his intellectual faculties. The excellence of his writings has not only caused their wide circulation in this kingdom, but has extended their sphere of instruction to foreign countries. His best articles are translated into the French and German languages; and "Robert Brown of Markle" is quoted by Continental writers, as an authority on agricultural subjects. He took an active interest in the public welfare, especially when rural economy was concerned, and by his death the tenantry of Scotland have lost a no less sincere friend than an able and zealous advocate. We enjoyed the advantages of Mr. Brown's friendship for upwards of thirty years, and he was one of our earliest contributors when we commenced this Magazine. No one can more deeply regret his loss than ourselves.

Mr. John Williams died on the 14th of February last, aged 22 years. He was several years shopman to his uncle, Mr. B. Saunders, nurseryman and seedsman, Jersey; and his skill, diligence, disposition, and manners, joined to a highly cultivated understanding, had gained him the regard and affection of all his companions, and the esteem and respect of his superiors. — *A Constant Reader. Jersey, March* 8. 1831.

THE

GARDENER'S MAGAZINE,

JUNE, 1831.

PART I.

ORIGINAL CORRESPONDENCE.

Art. I. *Notes and Reflections made during a Tour through Part of France and Germany, in the Autumn of the Year* 1828. By the Conductor.

(*Continued from* p. 134.)

The Market Gardens of Paris (les Jardins Marais) are numerous, generally of small extent, and cultivated by manual labour; but a few of them may be designated Farm Gardens, in which are used the plough and other agricultural implements. As vegetables enter more into the cookery of France than they do into that of England, an immense quantity is consumed at the hospitals and similar institutions; and, in consequence of this, the more extensive market-gardeners employ their produce chiefly in executing contracts entered into with public bodies. With this exception, the produce of the Paris market-gardens is sold in the vegetable markets, as in London. There are several of these, but none so decidedly superior to all the others as to be compared to Covent Garden Market. The Marché des Innocens appeared to us one of the largest. We visited it twice, on September 13th, and December 20th, and shall note what we saw in it on those days, with the conclusions which we drew.

La Marché des Innocens. — *Sept.* 13. The area exceeds an acre, and is surrounded by a quadrangular range of sheds, open on both sides, with a walk in the centre. In the enclosed area, potatoes and other roots are sold, as in the area of Covent Garden Market. We shall compare the supplies of the two markets about the same season of the year; and for that purpose we request our readers to open Vol. IV. at p. 408.

The Cabbage Tribe. — An abundant supply, but the variety not great, and the kinds coarse and not well headed. Very large savoys, some red cabbages and field-cabbages, and also some broccoli and cauliflower. On the whole, the markets of London, Edinburgh, and Strasburgh, which we have seen at the same season (Edinburgh in 1803, and Strasburgh in 1819), were rather better supplied than the Marché des Innocens. The deficiency appeared to be in the quality of the kinds of cabbage and broccoli.

Legumes. — Ripe pods of kidneybeans, but none green, and no common peas in pods. Decidedly inferior to British markets.

Tubers and Roots. — Abundance of potatoes, but the sorts not such as would be considered good in Britain. Quantities of Jerusalem artichoke, scorzonera, black radishes, Teltow turnip, solid celery, carrots, parsneps, succory roots, and others. The variety much greater than in Britain, and the quality of every article, except the potatoes and carrots, equal, if not superior.

The Onion Tribe. — An abundant supply of both onions and leeks, and also a quantity of shallots and garlic. The leeks smaller than in Britain.

Asparaginous Plants, Salads, &c. — A few artichokes, and some half-blanched celery, lettuce, endive, lamb's lettuce, and other salads. The variety greater than in Britain, the supply more abundant, and the quality superior.

Pot and Sweet Herbs. — Abundance of parsley of a coarse sort, tarragon and all our other aromatic herbs, capsicums in quantities, tomatoes, and egg-fruit. The variety and supply both greater than in Britain.

Fungi. — Abundance of mushrooms, and some truffles.

Fruits for Tarts and Pickling. — Large quantities of white cucumbers (concombres), of pickling cucumbers (cornichons), gourds, and pumpkins, in great variety, of all sizes, but we did not observe the vegetable marrow. On a par with British markets.

Fruits. — Abundance of apples, chiefly Colvilles; and of pears, chiefly bon chrétiens and bergamots; rock and Cantaloup melons, Chasselas grapes, peaches, figs, and plums; pear-shaped sorbs, sold at about a sous each; and a great quantity of very excellent alpine strawberries. The last article is the only one in which this market excelled that of Covent Garden: in all the other fruits it was much inferior.

Adjoining the market are shops, in which are sold pistachios and other dried fruits, oranges, nuts, &c., burnt onions, burnt carrots, dried pears, plums, apples, and apricots. The onions and carrots are charred so as to become as black as ink: this effect is produced by baking them slowly in an oven, and taking them out at intervals during several days. They are used in cookery for colouring soups.

Sprigs of orange tree in blossom are, we were told, to be found in this market throughout the year. These are considered essential accompaniments to the dress of bridal parties; and although artificial flowers, perfumed with orange-water, are sometimes employed by those who cannot afford the living article, yet the latter is by far the most generally used.

On the whole, the supplies of the Paris vegetable markets are inferior in point of excellence to those of London. The quality and variety of fruits are greatly inferior, and also the dryness and flavour of potatoes, and the succulency of turnips, cabbages, and the other common culinary vegetables; but the Paris markets approach to equality with those of London, in mushrooms, salads, and aromatic herbs, during summer, and surpass us in those articles during winter.

December 20. Observed a great quantity of excellent cauliflowers; endive and chiccory, blanched in different degrees; lamb's lettuce, scorzonera, Teltow turnips, solid celery, common white turnips, very long leeks; onions, rather small; excellent field cabbage, in immense quantities; savoys, large heaps of mushrooms, and, to the best of our judgment at the time, every vegetable seen in the London markets about the same season, with the exception of broccoli, sea-kale, asparagus, and forced rhubarb. The fruits were Chasselas grapes, Colville and reinette grise apples, a few indifferent pears, different kinds of service, cornel berries, walnuts and filberts, and sprigs of orange-blossoms, as in September. It is but fair to mention that we failed in being at the market sufficiently early in the morning to see things in their best state. We shall now glance at some of the market-gardens.

The Field Market-Garden of M. Cadet de Mars, at Aubervilliers. — *Oct.* 4. Aubervilliers is a small village, about a league from Paris, and M. Cadet de Mars's grounds occupy 50 or 60 acres round it. This gardener has been repeatedly mayor of his village, and he is unquestionably at the head of field market-gardeners in the neighbourhood of Paris. He was, as he told us, a peasant; but it is impossible to see his imposing manly figure and open generous countenance without feeling that he is noble by nature. He is upwards of seventy; and he began the world without a penny, and without education; but he is now proprietor of the grounds which he cultivates, besides houses and other property. He has lately ceded his grounds, with the exception of a few acres for his own amusement, to his children; and lives quietly with his wife, an excellent woman, about twenty years younger than himself. This old man is full of gaiety and spirits, content with his past life, and apparently happy. He has always had the greatest curiosity respecting other countries, and this still breaks out every time he sees a foreigner. He told us that he would travel through England, provided his wife would accompany him. He once went as far as Havre with a friend who was going to England, for the sake of seeing the sea, and he speaks with raptures of the visit. He takes an interest in all that is passing in the world, and spoke much of America; the government of which he admires beyond that of all other countries, and which he hopes that France will one day adopt as a model. He spoke much of the first revolution, of which he had witnessed many of the most interesting scenes. In politics and morals, indeed, he is far beyond his contemporaries; and is, in short, as far as an unlettered man can be, all that Jefferson or Lafayette could wish him to be. He made his fortune chiefly by taking large contracts to supply the hospitals. The largest contracts he ever had were made with the Hospice Salpêtrière; for which on gourd-day, i. e. the day on which the vegetable used in the soup served to the inmates is the pumpkin or the gourd, he used to supply 6000 lbs. He has had a fruit of the mammoth gourd which weighed 195 lbs. He had also large contracts with the manufacturers of sugar from the beet root; especially during the years 1812 and 1813, when the price of sugar in Paris was 5 francs per lb. These companies failed, for the most part, in 1814 and 1815, when sugar fell to 14 sous per lb. His sons still cultivate large quantities of mangold-wurzel for feeding cows; and it deserves to be remarked, that these cultivators, and also others in their neighbourhood, who formerly used to gather a part of the leaves to sell as fodder while the plants were growing, have now left off the practice, from finding that it lessens the size of the roots.

In the field-garden culture practised here, and in other field-gardens in the neighbourhood of Paris, the soil is ploughed for the crop with a two-wheeled plough; but all the operations of cleaning and gathering the crop are performed by manual labour. Irrigation, either by manual labour or by channels on the surface, is seldom resorted to. There is no regular rotation of crops; but in general, after three or four crops of vegetables, a crop of wheat is taken, or the land is sown with lucern, under which it remains from two to five years. Turnips are seldom sown in the spring, because the drought and insects destroy them; but in August, after the crop of peas, wheat, or rye is removed, they are sown with success. Onions and leeks are sown together in February: neither grow large. The onions are removed early in September, and the leeks remain to be taken up as wanted. Small leeks are preferred in the Paris market, as having more flavour; and the same as to onions and asparagus. Where the soil is deep, soft, and inclined to moisture, the marshmallow is cultivated for the apothecaries, and found to pay well, because suitable ground for this plant is rare on secondary limestone. Asparagus is grown in single rows along the bottom of shallow trenches, and, instead of covering the plants during winter as we do in England, their crowns or buds are laid almost bare, so as to receive the first influence of the sun in spring. As the plants begin to push, they are earthed up. A part of the grounds is planted with vines, in rows about 3 ft. apart, between each row of which is a row of asparagus; and in the rows of vines are asparagus plants, which alternate with the vines. When the vines are in fruit, the stalks of the asparagus are tied together in bundles, to admit more air to the vines. On expressing our surprise at the practice of laying bare the buds of asparagus during the winter, M. Cadet de Mars acknowledged that highly succulent varieties of asparagus, grown in deep richly manured soil, such as might be seen in some private gardens, and particularly in that of the king at Versailles, would suffer from this practice; but that field-asparagus, such as that before us, was nearer a state of nature, and suffered no injury. He observed that a covering of earth or litter, while it prevented the escape of heat, at the same time prevented its entrance; and he gave, as an instance in favour of the practice, the well known early flowering of bulbs planted on the surface, as done with crocuses about Paris, in comparison with those which are inserted some inches deep in the soil. He is of opinion that cold serves to force forward plants as well as heat; having remarked that, after a very severe winter, provided it were short, bulbs flowered earlier, and asparagus was ready to cut sooner. Of course, this doctrine can only apply to very hardy plants; but, relatively to them, it appears to be one well deserving the consideration of British gardeners.

In the grounds which M. Cadet de Mars has retained for his own amusement, there is a wall covered with peach and apricot trees, very well trained in the fan manner. Along its top there is a projecting trellis, supported, at an angle of about 60°, by struts abutting against the wall, about 2 ft. lower than the top; and this trellis is covered with vines. The upper parts of the peach and apricot trees were evidently injured a little by the shade of the vines; but we were told that the latter were of some use to the former in spring, by protecting their blossoms from perpendicular cold. The trellis was loaded with grapes, which, from the path in front, had a very rich appearance. There were a great many dwarf apple trees in this garden, trained *en gobelet*; the sort preferred was the reinette de Canada. Behind M. Cadet de Mars's house is a small walled garden, formerly, if we are not mistaken, the burying-ground of a religious establishment, the church of which is now one of M. Cadet de Mars's barns, and is filled with apples and onions. There are some very large standard apricot trees in this garden, and a very old vine, which bear abundantly; and we saw a stack of onions as large as a haystack. The onions are stacked by alternating them with thin layers of rye straw; the straw at the outside of the stack being doubled in over the onions, so that none of them appeared to view. We have seen carrots stacked in the same manner with wheat straw in England.

Having seen every thing, M. Cadet de Mars invited us to take some refreshment, and see his wife; and after partaking of some excellent brown bread, butter, cheese, grapes, apples, and wine, we took leave of him with feelings of veneration and respect for the native dignity and worth of the man, and with our imagination fully occupied with the idea of what he would have been with a good education. Any Englishman in Paris who may be curious to visit Aubervilliers may consult M. Lacroix, at M. Vilmorin's, who was our guide. M. Lacroix will, no doubt, find that we have in this account omitted much which is worthy of notice, and probably made some little mistakes in what we have attempted to relate: but such as there may be, we trust he will attribute to the true cause, forgetfulness; and, if they are serious, send us his corrections.

The Fig Gardens at Argenteuil, a Village Two Leagues North of Paris. — Oct. 5. In the neighbourhood of this village, on the road to St. Dénis, the fig is cultivated like the vine, and often mixed with it in the open fields. The figs are low spreading bushes, none of them higher than 6 ft. or 7 ft., with the branches proceeding from the centre or stool in five or six clusters or bundles; each bundle consisting of three or four leading branches with their side-shoots. The angle which the bundles make with the ground may be about 45°. The cause of the shoots being in bundles, and of the obliquity of this angle, is, that the bundles are every winter bent down to the ground, and either held down to it by stakes or stones, or partially or wholly buried in the earth. It is a mistake to suppose that a covering of earth is required to protect them from the frost: pressing them to the surface of the ground, and retaining them there, as done with the vines in the south of Germany, is sufficient. It is only because it is found the cheapest mode, labour being less costly than either stones or stakes, that the branches are most frequently partially buried. An old man and his wife described to us the manner in which the trench for each bundle of branches was dug out, and the bundle held down by one man, while another covered the extremities with about a foot of earth. The centre of the bush is sometimes enveloped in straw; but this is considered too expensive to pay. Any leaves and unripe fruit which may be on the branches are removed when the branches are laid down, to prevent their rotting the young shoots. In spring, when the earth is removed, the bundles are untied, and the branches restored to their former position; the dead wood is then cut out. Almost the only pruning given is in June, when the points of all the young shoots are pinched off, to enlarge the size and hasten the growth of the fruit. Whenever a shoot becomes too stiff to bend down, it is cut off close to the ground, and a young sucker is allowed to take its place. The figs which proceed from the wood of the past year ripen naturally; but those on the wood of the current year frequently do not ripen at all, and almost always require artificial aid. This aid consists in dropping a little oil into the eye or flower of the fruit. The woman mentioned was employed for this purpose, and showed us how it was performed. She had a small phial of olive oil suspended from her apron-strings, and in her hand the upper part of a stalk of wheat, forming a tube open at both ends, about 5 in. long. She inserted the small end of this tube in the phial, and, before taking it out, placed her thumb on its upper and broadest end, to prevent, by intercepting the pressure of the atmosphere, the oil which had risen in the tube from flowing out; with the other hand she then turned towards her the eye of a full-grown fig, and applying to it the small end of the straw tube, lifted her thumb from the other end, just long enough to let a small drop of oil enter the orifice in the fig. Before requiring a fresh supply of oil, she performed this operation to ten or twelve figs. The object of this application, she told us, was to occasion a sort of artificial ripening or easy separation (pour les faire partir) of the fig from the shoot. It certainly renders them eatable; but they are far from being equal to those which are ripened naturally.

We cannot help noticing here the wretched condition of the old man and his wife who gave us the above information. Though neither seemed labouring under acute disease, nor suffering from absolute want of either food or clothes, yet the appearance of both indicated what we should call great natural misery. The man, who appeared between 60 and 70 years of age, was completely blind; and the woman, who might be 10 or 15 years younger, had her eyes highly inflamed, or rather bloodshot, and running with water. Both were without teeth, and very much bent downwards. The woman first caught our eye; and it was not till we enquired respecting the mode of laying down the figs, that we learned that a man was near. When she went to bring the poor, blind, infirm creature, we were surprised to find him, though it was Sunday, engaged in mowing, or rather in attempting to mow, a small patch of lucern. It was an affecting sight to see the wife take her husband's hand, and lead him, tottering, over the furrows, to the trees; and not less so, to see him attempting to make us comprehend the manner of laying down the branches. His voice had very much failed him; and that circumstance, together with his *patois*, rendered it very difficult for us to comprehend a word he said. From the woman, however, we understood that they had had two sons in the army; one had been killed in the West Indies, and the other they presumed to be dead, not having heard of, or from him for upwards of twenty years. They had a daughter, also, of whom they had not heard for nearly an equal period. As far as we could understand, this couple were what would be called in England on the parish; and they were employed as *gardes champêtres*.

From the expressions used by the woman on receiving a trifle, her only consolation seemed to be in the hopes held out by religion: a happy provision of nature, under certain circumstances of mental cultivation, for the loss of all worldly comforts. When every thing else is gone in this world, there is always the world to come on which to anchor our wishes and hopes. In all that regards the present, the condition of this couple must be low indeed in the scale of human happiness; and if there were not a prospect that the progress of civilisation would greatly ameliorate this class of society, one might be tempted to ask whether it would not be better for a man to lose his life in battle, or otherwise to be cut off in the midst of his strength, than to live till the simple want of good and sufficient food and clothing rendered existence a matter of indifference, or perhaps a burthen. Fortunately for human nature, there exists the principle of sympathy, which impels all men not under the influence of diseased feeling to desire that good for others which they possess themselves. Hence, one of the grand characteristics of civilisation is respect for the infirmities of age. As society improves, the condition of the aged poor will be improved also: and for such a couple as we have just described, half a century hence there will not, in Europe at least, be war to bereave them of their sons; nor will ignorance and difficulty of communication exist to such an extent as to prevent them from corresponding with their daughter. Among people so generally enlightened and so well governed as all the nations of Europe must in the natural course of events soon be, it will be impossible for any misery to exist that is not the result of positive crime, natural disease, or accidental evil.

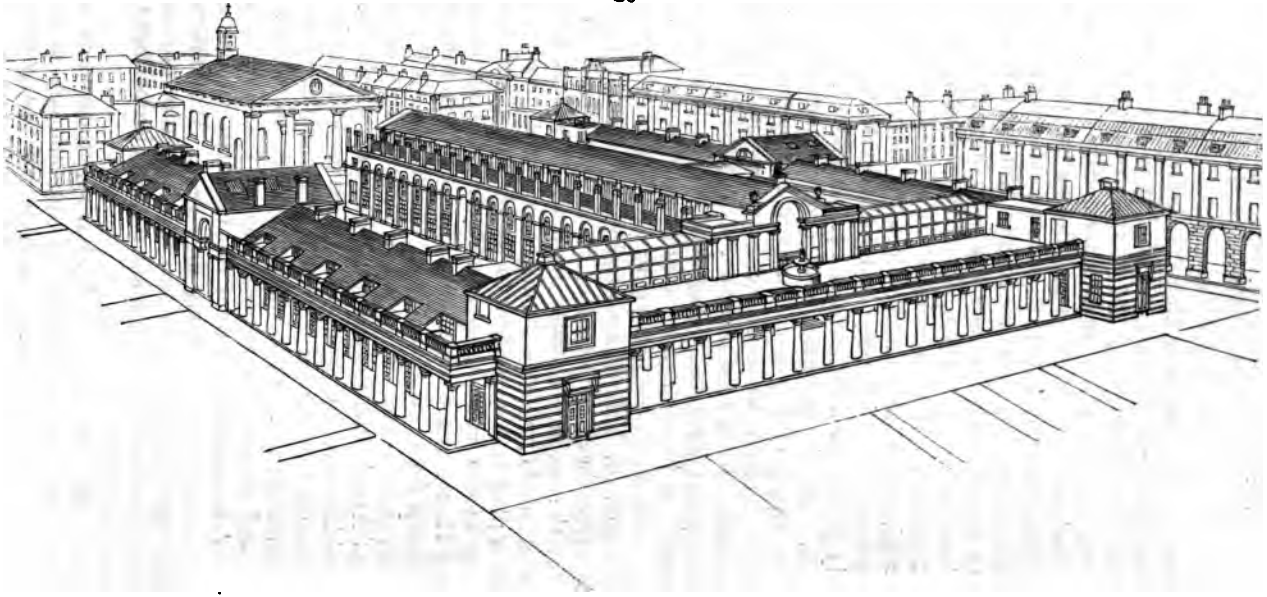
(*To be continued.*)

Art. II. *Description of the New Market of Covent Garden, London.* By the Conductor.

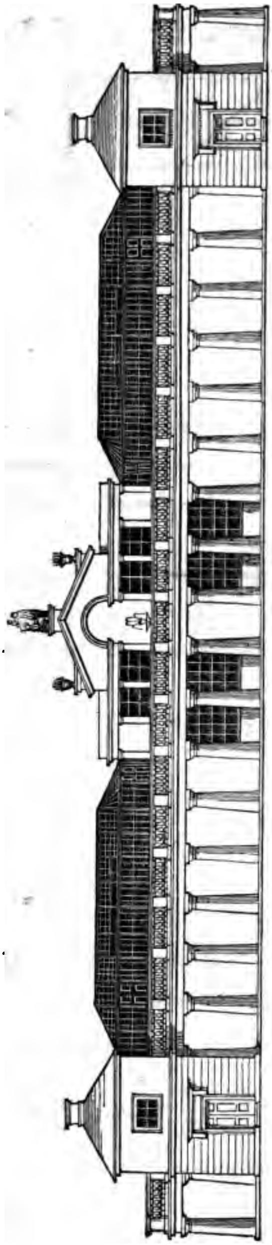
The market of Covent, or Convent, Garden is so named from its site having been once the garden of a convent. It occupies a space measuring 326 ft. from east to west, and 248 ft. from north to south, and consequently covers nearly two acres of surface. This space, before the present new building was commenced in 1828, was partially covered with open sheds and wooden structures, which had not the slightest pretension to uniformity or any other architectural beauty, further than that most of them were ranged in straight lines from east to west. With the exception of the beauty of the articles sold, which were at all times the best the country could produce, every thing else had a disorderly appearance; frequently joined to litter, refuse, and an apparent want of cleanliness. As the population of London increased, and with it the supply of vegetables brought to this market, very considerable inconvenience was experienced, both by sellers and purchasers, from want of room.

Various plans have been suggested for its improvement. We recollect an ironmonger talking of throwing a glass roof over the whole market at the height of 50 ft. from the ground, and supported on hollow cast-iron pillars; some of which were to serve for the descent of water from the roof, and others for the ascent of smoke from the fireplaces in such living apartments or shops as might be constructed below. In 1827, a plan was submitted to the Duke of Bedford, as proprietor of the market, by Mr. Fowler, and exhibited at Somerset House in the same year. A model was soon afterwards formed from this plan, and exhibited to all those interested in the market. This model may now be seen in the Gallery of Arts in the Colosseum. The ground-plan of this design, which was engraved in 1827, exhibits three parallel buildings, each surrounded by an open colonnade. Exterior to the buildings is a space sufficiently wide to allow a row of carts and waggons to arrange themselves, side by side, the horses' heads pointing from the building, without interrupting carriages passing along the street. We understand the chief objection to this plan was the occupation of so much space by the colonnades. In other respects it does not differ essentially from that executed.

In 1287, the Duke of Bedford, having procured an act of parliament for the rebuilding of the market, employed Mr. Fowler as its architect; and, by the suggestions of Mr. Charlwood, who was employed to arrange the ground-



Perspective View of the New Market of Covent Garden.



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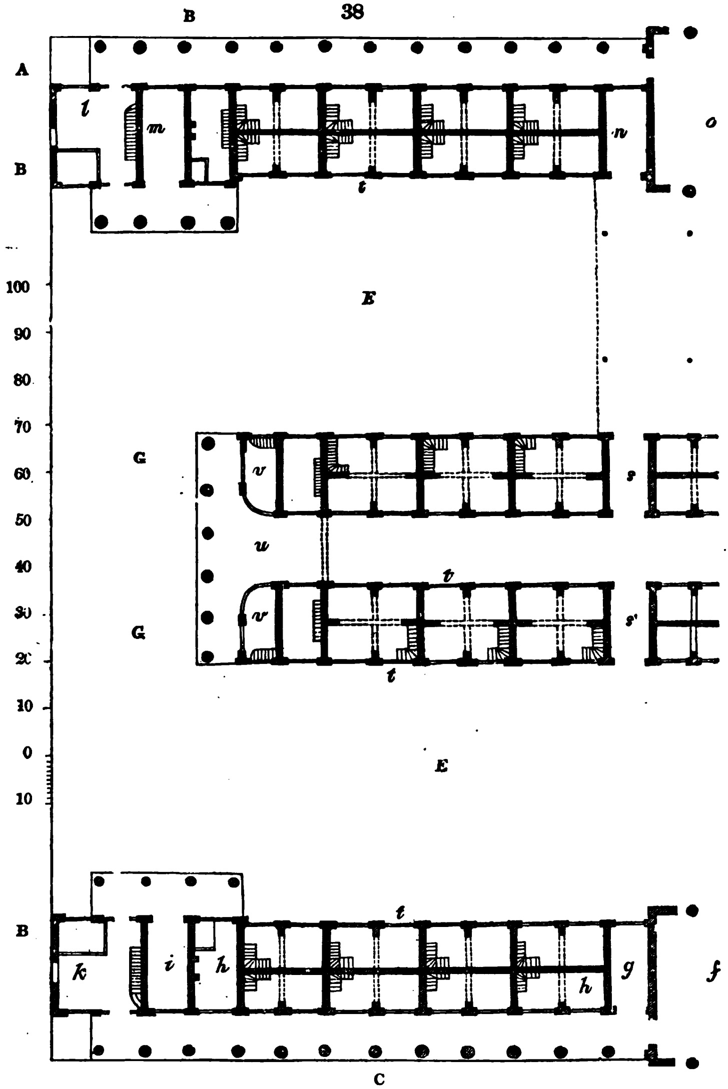
plan, distribution, and appropriations of the different departments of the market, the plan of Mr. Fowler was altered till it assumed the form of that about to be described. (*fig.* 36.)

Approaching from the east, the chief feature is the quadruple colonnade (*figs.* 37. and 38. *a*), with the conservatories over. In the central building is a passage 16 ft. wide (*t t u*), open to the roof, and on each side a range of fruit shops, forced articles, and the more choice culinary vegetables and herbs. Each shop has a cellar under and a room over it, with a trap-door to the former, and a small staircase to the latter. There are two exterior colonnades on the north and south sides (B A C C), which serve as passages in front of the shops: the shops on the north side are for different descriptions of culinary vegetables and the commoner fruits, and those on the south side are exclusively for potatoes and the commoner roots. The half of one of the areas (DD) is covered with a roof in three parts, open at the sides for ventilation and light; the roof is supported by cast-iron pillars, from which spring circular ribs, instead of horizontal tie-beams; and the result is a very light appearance. Under it is held the wholesale fruit market, and below the surface are fruit cellars. The open space (F F D) under the quadruple colonnade is occupied at one end as a fruit market, and at the other with stands for fruits and vegetables.

The ascent to the conservatories over this open colonnade is by four staircases, two from the central pas-



a, Quadruple colonnade, over which is the conservatory rented by Cormack, Son, and Sinclair.
b, Quadruple colonnade, over which is the conservatory occupied by Hockley and Bunney.
c, Public house.
d, Passage.
e, South stair to the conservatory.
f, Open casual potato market, or space which may be appropriated to general purposes.
g, Passage.
h, Two public houses.
i, Passage.
k, Seed and herb shop, occupied by Mr. Butler.
l, Seed and herb shop, occupied by Mr. Dickson.
m n, Passages.
o, Open casual fruit market, or space which may be generally appropriated.
p, Passage. *q*, North stair to the conservatories.
r, *Wholesale fruit and potato* warehouse.

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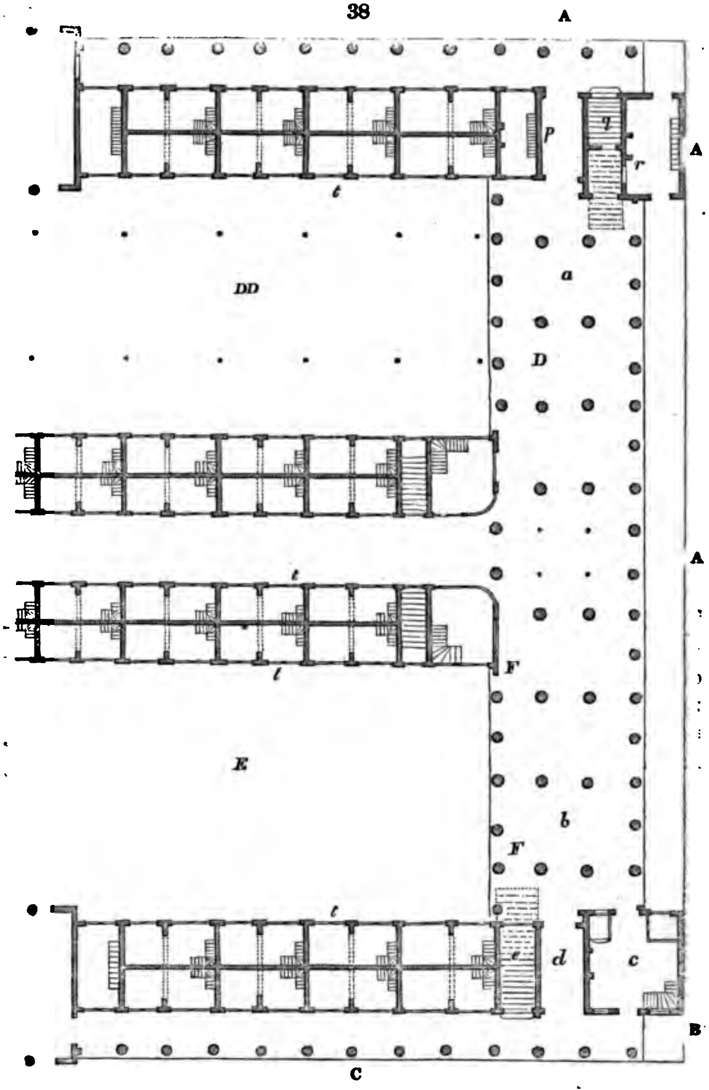

s, Passages.
t, Shops and dwellings over.
u, Portico, with terrace over it, for hardy plants.
v, Shops, with rooms over for eating fruit and ices, communicating with terrace over the portico.

A, Area, 12 ft. deep and 9 ft. wide, apportioned in spaces for casualty stands; that is, stands for any grower or dealer, not a regular tenant, who chooses to send articles to market.
B, Cart or waggon stands, 12 ft. deep and 9 ft. wide; taken by the market-gardeners or garden farmers by the year.
C, Potato stands, 10 ft. wide.
D, Fruit market. **DD** is roofed over, the roof being supported by iron pillars joined by spandrils.
E, Open pitching stands for vegetables and potatoes, rented by market-gardeners as yearly tenants.
F, Covered pitching stands for fruits and vegetables.
G, Flower-stands for plants in pots, in balls of earth, and for nosegays.

sage (*u t t*), and one from the end (*e q*) of each of the exterior colonnades. The framework of the conservatories is wholly of cast-iron and copper, even to the shelves of the stage (*fig.* 39.), and the work is executed with remarkable neatness by Messrs. John Jones and Co. of Birmingham. The conservatories are 15 ft. broad, and 15 ft. high: they do not occupy more than a third of the area of the terrace, and the remaining part serves as a promenade, and for the display of hardy plants in pots and vases, and other garden ornaments. In the centre of the terrace is a handsome fountain (*fig.* 40.), designed by Mr. Fowler, of Devonshire marble, highly polished: the machinery was executed by Messrs. Brathwaite. The water is supplied from a cistern, or rather a

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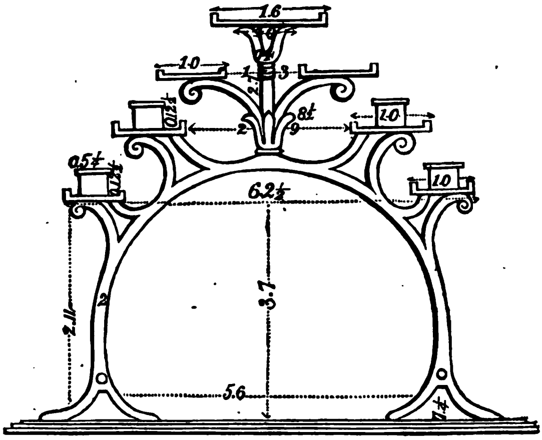

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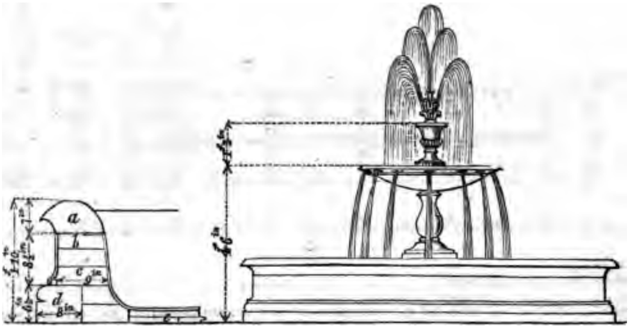

a b c d e, Section of the wall of the basin on a larger scale.

series of connected cisterns, placed immediately under the roof of the grand central passage. Adjoining each conservatory, and in the occupation of the same tenant, is a small room devoted to books, plans, models, and other new or interesting objects connected with agriculture or gardening, and also an office or counting-room and other conveniences. One of the conservatories is occupied by Messrs. Cormack, Son, and Sinclair, nursery and seedsmen, of New Cross, near Deptford; the other by Messrs. Hockley and Bunney, nursery and seedsmen, Kingsland Road.

There are cellars below all the fruit markets, under all the buildings and pathways, and continued through one side of the long market (E E) for storing up potatoes. There are rooms over all the shops, used partly as store-places and partly as bedrooms.

Both the open and covered markets are inaccessible by carts and waggons. There are circular openings or manholes, 2 ft. in diameter, in the floor of the long market (E E), which communicate with the cellars, and through which the potatoes are shot down; and there are openings by trapdoors to the cellars of the fruit market for similar purposes. The openings by which the potatoes are brought up from the cellars are within the buildings. There are also cellars for washing the potatoes, and water is laid on for this purpose, as well as for general uses, throughout the whole of the buildings. The supply is obtained from an Artesian well, sunk beneath the central path to the depth of 280 ft., which affords 1600 gallons per hour, a quantity greatly exceeding any occasion that can be expected to arise. A small steam-engine, on Brathwaite's most improved principles, has been erected, to distribute the water over the higher parts of the buildings, and the whole area of the markets, and more especially to supply the handsome fountain before mentioned on the terrace in front of the conservatories. In the centre of the market there will be an apparatus, by attaching hose to which the whole surface of the market can be washed and effectually cleaned in a few minutes. By the same means, also, fire may be instantaneously extinguished. The central passage (*u t t*), the exterior colonnades, and every other exterior part, independently of the interior of the shops, are lighted by gas.

The interior walls of the shops, cellars, &c., are of brick, faced in conspicuous situations with Yorkshire freestone. The columns are of Scotch and Devonshire granite, the shafts being of one stone each. The paving of the passages is partly of granite and partly of Yorkshire stone. The open and covered markets (E and DD) are causewayed with granite, in the manner of the best street paving. The terrace over the quadruple colonnade is composed of large slabs of stone, which form at once the floor of the terrace and the ceiling of the colonnade. From the terrace the water is drained into hollow cast-iron beams, on which the stones rest. These are supported by columns, some of which, in the centre compartment, indicated between D and F, are of cast iron, for the purpose of obtaining more light and space directly in front of the central passage. The exterior passages, including the shops, are covered with slate and zinc. The whole was admirably executed by Mr. William Cubitt, of Gray's Inn Road, by contract. The work was begun in September, 1828, and finished in May, 1830. It has raised Mr. Fowler to the very first rank as an architect, and confirmed, if confirmation were necessary, the high opinion every one entertained of the skill, integrity, and honour of the contractor.

The conservatories are heated in a new and very ingenious manner by hot water or by steam, at pleasure, according to a plan devised and executed under the direction of Mr. Collins, 14. Tavistock Row, Covent Garden. This very ingenious engineer has obliged us with very complete plans of the apparatus, which we intend to give in a separate article in a future Number.

The appearance of the market is on every side highly architectural, though the accompanying perspective view of the east front (*fig.* 41.), copied from one obligingly lent us by Mr. Fowler, is too small to give any adequate idea of the elegance of the design.

To walk through this market with the recollection of what it was three years ago, gives rise to a variety of reflections. By what cause has it come to pass that the pillared grandeur and temple-like magnificence, which in former and no distant times were exclusively devoted to the edifices consecrated to the gods or occupied by princes, are now judged appropriate to the scene of humble industry and the abode of every-day people? Is this change merely attributable to the accidental circumstance of an individual being at once rich, patriotic, and a man of taste; or is it the result of any general principle in constant operation?

In the days of the Grecian republics there were no magnificent buildings but the temples, and those were erected at the general expense. The Roman emperors built sumptuous palaces, and some of their favourites had magnificent country villas. All these were, in process of time, destroyed by the inroads of hardy barbarians, who easily overcame the effeminate Romans, because the Roman empire had then no

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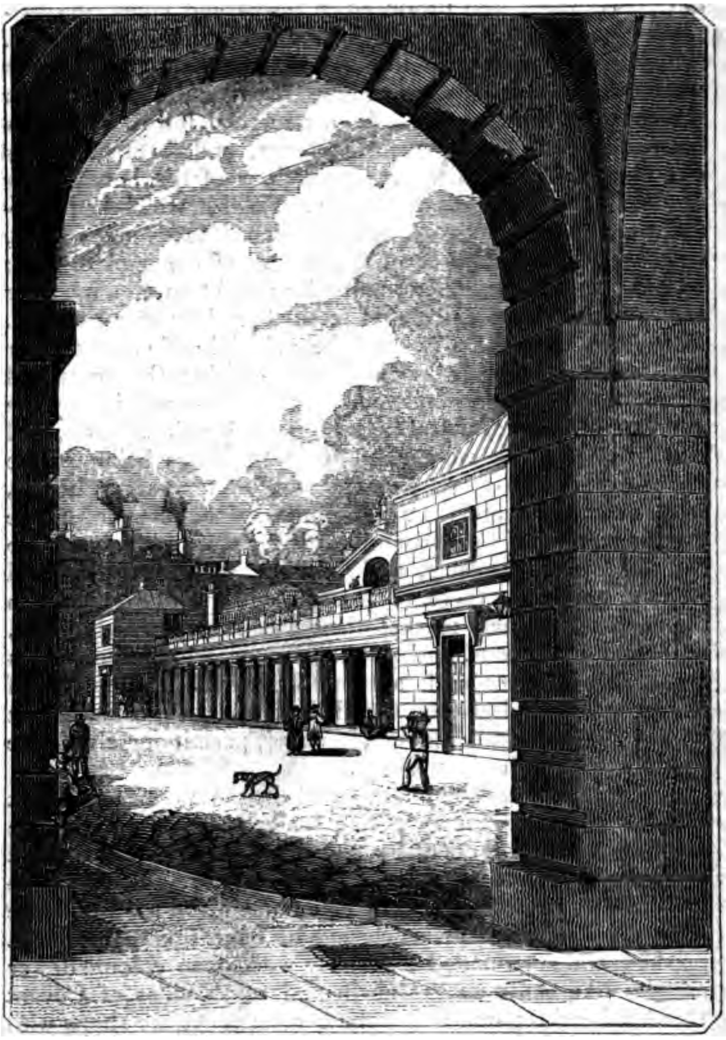

foundation in moral strength. In the dark ages which succeeded, the only magnificent buildings erected were churches, convents, kings' palaces, and castles, or rather fortresses. Almost all other structures were temporary hovels, till the establishment, by degrees, of commercial towns; first in Italy, and afterwards in Portugal, Holland, Germany, France, and England. These towns constituted a new power in society, and gave birth to that principle of modern commerce, or, in other words, of civilisation, which has since gradually developed itself, and produced in towns and cities, market-places, piers, quays, exchanges, and other public buildings. These erections were at first merely useful, but by degrees were constructed so as to combine beauty and character with the requisite convenience. As commercial towns and cities increased, churches, convents, palaces, and fortified castles diminished; the architectural splendour of the latter being gradually transferred to the former. Wealth, which had heretofore consisted chiefly in the possession of lands and vassals, now began to accumulate in the coffers of commercial men; and these, like the others, naturally sought to employ their riches in buildings calculated to further their own pursuits. Such have been the effects of the principle of commerce or civilisation. It might easily be shown that the continued operation of this principle, aided, as it soon will be, by the general diffusion of useful knowledge and rational taste, will end in almost the only magnificent buildings being public ones, and in the total disappearance of temporary hovels, whether as commercial or agricultural structures or private dwellings, and of palaces and castles, except as ruins. No cathedrals and convents, and but few private castles and palaces, similar to those of Europe, will ever be erected in America; but such market-places, colleges for education, parochial institutions, and public gardens, will be erected in that rising country as it accumulates wealth, as, in point of real grandeur and beauty, founded on utility, have never yet been surpassed. We shall not, however, permit ourselves here to indulge in such speculations.

As contemporaneous buildings of the same class as Covent Garden Market, we may notice some other very handsome erections in foreign countries, the work of the end of the last or the commencement of the present century. The first are the bazaars of Moscow and Petersburgh, which are large quadrangular buildings, enclosing an open square used as a market, and surrounded exteriorly with open colonnades or arcades like those on the north and south sides of Covent Garden Market; and under these colonnades are shops with rooms over, exactly like those which have been described. The Exchange of St. Petersburgh is also a remarkably handsome building, only surpassed by that of Paris, which is the handsomest work of the kind, we believe, on the Continent. The only commercial building in London which ranked with these, previously to the commencement of the present century, was Gresham's Royal Exchange; the work of an individual; and as great an effort, relatively to the times in which it was produced, as is the Covent Garden Market, erected by the Duke of Bedford, to the present era. We make the comparison with no view of detracting from the merits of this nobleman, few can have a higher respect for him than we; but simply to aid the young gardener to generalise, for whom it must never be forgotten that this work is chiefly intended. It is, indeed, quite merit enough for any man to be on a par with the times in which he lives; and few, indeed, are those who, like Bacon in science and Jefferson in morals, can be said to have made one step beyond them. Another building which, it might be supposed, would challenge competition with the magnificent foreign structures we have just alluded to, is the Bank of England. We know not what the interior of this structure may be; but the exterior, designed, we believe, by at least two architects reputed at the head of their profession, has always struck us as a singularly unfortunate display of architectural design. Columns, which, to be grand and imposing, ought always to be, or to appear to be, essential component parts of an edifice, are here reduced to mere ornaments. They abound to such an extent as to destroy simplicity, as well as grandeur of character; and, interspersed with blank doors and windows in some places, and crowned with cinereal urns in others, produce so anomalous an effect, that a stranger walking round, and inspecting the different fronts, would be puzzled to conjecture the purpose of the huge pile. Viewing it from the north-west angle, it might well be taken for a metropolitan sepulchre; from the west side, a prison; from the north side, the walls and gates of a timber-yard; from the east, a stable-yard; and as to the south front, whoever has seen the Campo Morto at Pisa must be struck with the resemblance. Very different, indeed, is the new Post-Office, which, at once simple and grand as an architectural pile, conveys, as to character, exclusively the idea of public business. Covent Garden Market is also a structure at once perfectly fitted for its various uses; of great architectural beauty and elegance; and so expressive of the purposes for which it is erected, that it cannot by any possibility be mistaken for any thing else than what it is.

Covent Garden Market, we hope, may be considered as the commencement of a new school in architecture; and this school we should wish to distinguish as that of Reason and Philosophy, in contradistinction to the prevailing school, which may be denominated the School of Authority, or the Stationary School. The architects of the Bank of England clearly belonged to the latter school, and the architect of

Covent Garden Market, of the Hungerford Market, and of the Botanic Conservatory at Sion House, as clearly to the former. The School of Authority considers nothing as architecture for which some precedent may not be found in the buildings of the Greeks and Romans, and nothing legitimate in that architecture which cannot be subjected to the rules of one or other of the five orders. Hence the buildings usually denominated Gothic are rejected by the more rigid disciples of this school, as not belonging to architecture at all; much in the same manner that some sects of Christians deny that the religion of Mahomet is entitled to be denominated a religion. Bigotry and intolerance exist in the arts and sciences, as well as in philosophy and morals; and in no arts have they been more influential in retarding improvement than in architecture and agriculture. In agriculture, we have lawyers and land-stewards insisting on the insertion, in agricultural leases, of the same clauses respecting culture and management which were in use three centuries ago, when farmers were little better than cattle, yoked and driven by their landlords. In architecture, we have architects contending for forms and proportions calculated exclusively for a particular purpose and a particular climate, in a state of society as different from the present as darkness is from light. Nothing, however, exists for which there is not a cause, and that cause founded in nature. Things are chiefly good or bad relatively to circumstances.

The Stationary Schools, both of agriculture and architecture, were very good schools when mankind were in more danger of retrograding in arts and civilisation than of advancing. Where all are not enlightened, the many must always be led by the few; these few, whether in politics or in the arts and sciences, form the Stationary School; and the principle of self-preservation will render that school jealous of its power, and, consequently, adverse to all innovation or interference. There is, however, no Stationary School in nature; and, taking a general view of past ages, mankind have always been progressing, however slowly, towards something better. In modern times, the ratio of this progress has greatly increased, and the School of Reason is now everywhere in conflict with the School of Authority. The first grand shock which the School of Authority in agriculture received was the introduction of clover, turnips, and the artificial herbage plants, into field culture: the first assault upon the Stationary School of architecture was the employment of cast iron; first in bridges, and afterwards in houses, gates, and fences. A cast-iron bridge s an abomination to the Stationary School of architects; and what is called an open lease is the same to the Stationary School of land-stewards.

The reader may trace for himself the progress of the conflict between the Stationary and Progressive Schools in both arts: we shall confine ourselves to stating that Mr. Fowler is one of the few modern architects who belong to the School of Reason, and who design buildings on fundamental principles, instead of antiquated rules and precedents. In designing Covent Garden Market, his first object was, to produce all the accommodation and conveniencies which such a market required, or was susceptible of receiving, from modern improvement in the arts subordinate to architecture; his next object was, to make choice of the most suitable materials for executing his design, so as to combine strength and durability with moderation in the expense; and his third object was, to compose the forms, arrangement, and materials, in such a manner as to produce as high a degree of architectural beauty as was consistent with the other objects. In searching for this architectural beauty, he did not confine himself to the architecture of any one age or country, much less to any particular order in the Grecian or Roman schools; but, adopting unity of expression as a whole, and symmetry, regularity, and connection of the parts of that whole, as fundamental principles common to all architecture whatever, past, present, or to come, he drew from all that he found already existing, and from his own imagination, what best suited his purpose. How admirably he has succeeded in producing a whole of great architectural beauty, and perfectly suited to every required purpose, may safely be left to every unprejudiced observer to determine.*

Art. III. *Extracts from a Tour, partly Horticultural, in the Netherlands and Part of France, in June and July,* 1830. By T. Rivers, Jun.

Sir,

As the gardens of Flanders have not been much discussed in your pages, permit me to contribute my mite to the mass of useful information diffused in our Magazine, as we disciples of Adam have most undoubtedly a right to call it, in accordance with the fashion of the times. I have scribbled for you ere now, and, as "Malus," &c. &c., have figured, with other immortals, in your list of contributors. One fine day last June, with the aid of steam, I reached Calais, intending to route it through the north of France to Flanders. I searched here for some garden, to give me my first idea of French gardening, but in vain; for, with the exception of a neat one at the barrier at the Boulogne gate, belonging to one of the gendarmes, where were some fine larkspurs and good roses tied up to stakes to imitate standards, nothing in that way was to be seen. Hence to Dunkirk, by Gravelines, Mardyke, &c., the road is one uninteresting flat, planted in the avenue style; but the trees, owing to the violence of the sea breezes, presented a singularly distorted appearance, every branch and twig of them receding from the sea. At the entrance to Dunkirk I observed a new villa residence, the garden and grounds laid out in true formality; the white-sanded paths and grotesque-shaped borders unedged with box, but ill accorded with my green English ideas.

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* To complete the symmetry of the building, a colonnade and terrace are wanted at the west end, similar to those at the east end; and a roof over part of the potato market, similar to that over part of the fruit market; but these were contemplated in the original plan and will no doubt be executed in due time.

Dunkirk being a close fortified town, nothing in my way was to be expected; I therefore kept on my route. As the canal, the usual road for travellers to Flanders, was closed, being under repair; and as the "diligence," a town waggon with two horses, was uncertain, I shouldered my portmanteau, and walked on to Zudcoote, a small village eight miles on my road, whence the "barque" started in the morning. I was here first struck with the tremendous hoes of the peasantry: they were about a foot deep and 8 in. broad, nearly as large as our spades, and bright as silver. The soil, which all through this district is soft and peaty, allows them to be used with tolerable facility; in fact, they supersede the spade, as the soil is pulled over with them to the depth required for any common crop. Hoeing among thickly planted crops is not usual here, as they are weeded; and perhaps nothing gave me greater distaste to the agriculture here and in Flanders than seeing men and women crawling over acres of land pulling out weeds. After being towed at the rate of five miles an hour, along one of the numerous fine canals which abound here, we arrived at Fearns, the quietest dullest town imaginable. No gardens or orchards here greeted my eyes; nor hence to Nieuport, a strongly fortified but insignificant town. Shortly after, we came into the grand canal from Ostend to Bruges and Ghent, and in the evening we arrived at Bruges, my resting-place for a short time.

Having the journal of the tour by the Caledonian Horticultural Deputation with me, I thence gathered that the principal garden here was M. Bertrand's. To that I paid my first visit, and was gratified with seeing some fine specimens of Magnòl*ia* tripétala and acuminàta, *P*inus *Cémbra*, and *Æ*'sculus hùmilis. There were also in tubs Eriobótrya japónica, *C*lèthra arbòrea, 12 to 14 ft. high; and a fine collection of oranges, some of them very large. A clump of *R*hododéndron ferrugíneum formed an exceedingly gay mass. A summer-house on a large mound, the ascent to which was by circuitous shaded paths, into which pipes from a fountain were thickly introduced, for the purpose of wetting to the skin any loiterers, being one of the first foreign conceits of the kind I had seen, interested me. When the above tourists visited this garden, it was famous for cockscombs; but it now presented a sad contrast: the pines also were bad in the extreme; not a fruit, I should think, weighed more than ½ lb. I was much amused with the contrast this place afforded to our English pleasure-grounds; its black, soft, sandy paths and unmown grass had such a novel and rather uncouth appearance. A remarkable feature in Bruges consists of the vast walled-in gardens in the central parts of the town: one was pointed out to me, which contained 16 acres, and formerly belonged to one of the convents. Some men were digging with large long shovels, without the application of the foot; so black, soft, and unctuous was the soil. But although from its appearance it seemed fertility itself, yet neither vegetables nor fruit trees seemed to thrive in it. With the exception of pears, this is pretty generally the case at Bruges; as but few fruit trees exist long in this extremely light black soil.

I was introduced to M. Chautrell de Stappens, an English gentleman settled here, and married to a Flemish lady. He invited me to spend a day with him at his country seat of St. Croix, near Bruges.

Sawbridgeworth, Herts, Jan. 10. 1831.

(*To be continued.*)

Art. IV. *A Mode of destroying the Red Spider on Plants.* By G. J. P.

Sir,

As you are very desirous that all gardeners should not only be reading but writing gardeners, I, for the first time (being very young), venture to take up my pen to write a few lines, and shall be very happy should you think them worthy of insertion. The subject on which I now write is the red spider, which is very common on certain stove, green-house, and, in dry seasons, certain hardy plants. I have heard and read many receipts for the destruction of this insect, but I never found a more powerful remedy than clear water. I have under my care a few stove plants, which are in general in a very healthy state. I syringe them every morning with clear water on both sides of the leaf, and the plants are not in the least affected by this destructive insect. I had, for instance, a species of *Plumbàgo* that was much infested by the red spider; but after I had syringed it well for a few mornings, there was not an insect to be found on the plant. I verily believe that clear water, applied as before observed, will effectually destroy the red spider; and, if constantly used, it will preserve any plant from this destructive insect. I think that if stoves or green-houess devoted to the culture of exotics were steamed well every night (water being applied in the form of steam), the plants would never be attacked by the red spider.

G. J. P.

November 4. 1830.

Art. V. *On destroying Woodlice on Trees or in Frames; with a Notice of a Mixture for protecting the Stems of Trees from the Erosions of Hares and Rabbits.* By Mr. James Waldron, late Gardener to Sir William Call, Bart., Whitford, near Callington, Cornwall.

Take 1 lb. of dried cheese, and about 1 drachm of powdered arsenic, perfectly dry; for it is a fact not generally known, that arsenic when moist is not a poison (the best way to keep it is, therefore, in the lump): grate the cheese, and mix it and the arsenic well together. Take then small pieces of old board or wood, and bore in each a hole about 1 in. in diameter, and as much in depth. Put about as much of the above mixture as would lie on a shilling into each hole, and beat it down hard to the bottom of the hole. This done, lay down the bits of wood, the holes undermost, wherever the insects are troublesome; or, place the bits of wood against a wall, with the holes out of view. The destruction of the insects will be the speedy result. The mixture requires to be renewed every day; and very little of it should be made at a time, as in two or three days the arsenic loses all its poisonous qualities.

J. W.

London, November 15. 1830.

Mr. Waldron has also a balsam of very great efficacy in protecting trees from the ravages of hares and rabbits. It is not at all unsightly in its appearance, but is so offensive to the hares and rabbits that they will not approach it within a considerable distance.

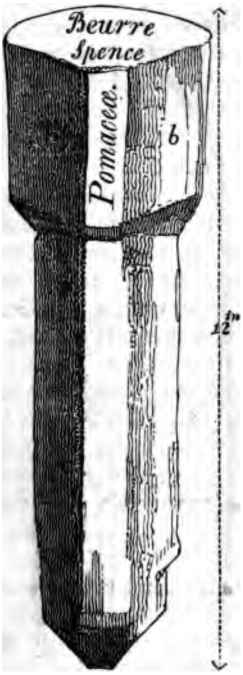
The composition of this balsam he considers too valuable a secret to be disclosed without a pecuniary remuneration; a circumstance we regret, and by no means approve of. — *Cond.*

Art. VI. *Description of some new Tallies employed in the Gardens at Brasted Park.* By Mr. James Pringle.

Sir,

I send you some specimens of tallies (*figs.* 42—47.) that I have now in the gardens at Brasted Park, which you may publish, if you think them worth it.

42



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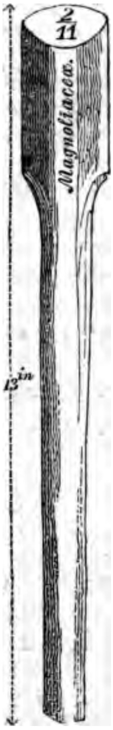

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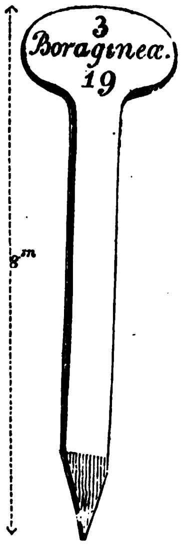

The tally marked Beurré Spence (*fig.* 42.) has two blank sides, which I have marked *a b*; upon these sides may be written the Linnean classification, the botanic name, synonymes, or the character of the fruit, whichever the gardener may think most conducive to the attainment of scientific knowledge. The figures $\frac{2}{11}$ on the tally Magnol*iàceæ* (*fig.* 43.), refer to the name in Sweet's *Hórtus Brit.*, 2 being the second genus (Magnòl*ia*), and 11 being the eleventh species, viz. Magnòl*ia* conspícua. Likewise, as to the tally *B*oragíneæ (*fig.* 44.), by looking at the natural order *B*oragíneæ, it will be seen that the third genus and eleventh species is *L*ithospérmum púlchrum. This practice of numbering the genera and species, and writing the natural order on the tally, instead of the name of the plant, I find an excellent plan for fixing in the memory the natural order to which the plants so numbered belong; and I recommend it to every young gardener

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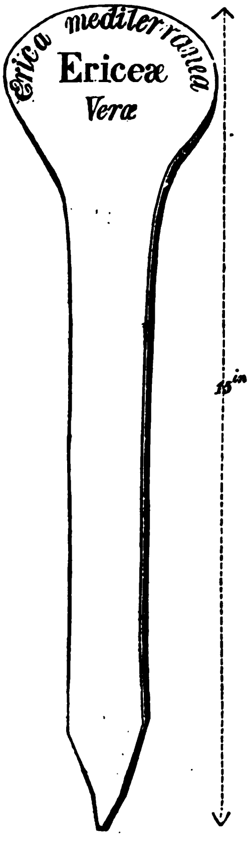

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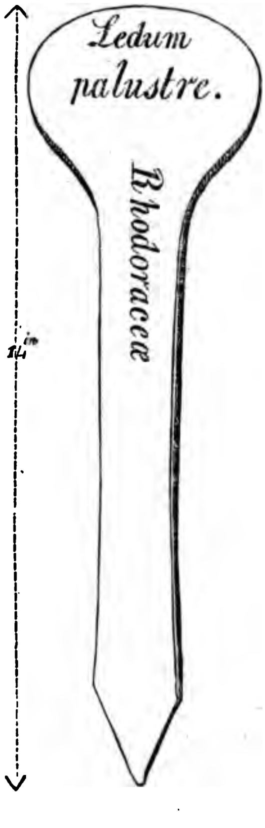

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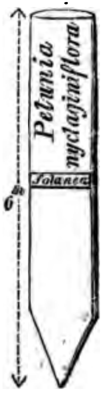


(like myself) who wishes to attain a knowledge of the natural system. Mr. Sweet's *Hórtus Británnicus* does not number the genera in each order; but any young gardener may do that in his own catalogue, until such time as some catalogue is published where the genera are numbered.

The other tallies (*figs.* 45, 46, 47.) have only the botanic name and the natural order to which they belong. But as you are more able than myself to discern and discuss the advantages and disadvantages of each of them, I shall say no more, but leave their merits to your decision.

I am, Sir, yours, &c.

Brasted Park, *April* 2. 1830. J. Pringle.

Art. VII. *Description of a Garden Hand-Drill.* By A. H.

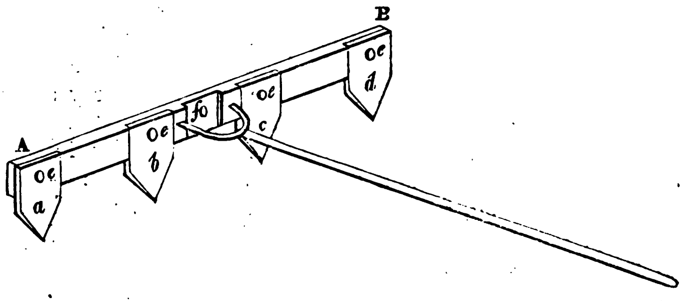
Sir,

I herewith send you a drawing of a small hand-drill of my invention, which I find extremely useful for sowing onions, carrots, &c.

A B is a piece of well seasoned wood about 21 in. long, 3 in. wide, and three fourths of an inch thick; *a b c d* are four pieces of wrought-iron plate about one eighth of an inch thick, and sharpened at the end. The two centre ones (*b c*) are movable, being retained in their places by two large-headed screws (*e e*) with nuts on the opposite side. All the plates are let into the wood exactly their thickness.

It is plain that by using the tool as represented in *fig.* 48. four drills may be drawn at once, 6 in. apart. If the two centre plates be removed, and one of them put into the middle (*f*), then the tool will make three drills 9 in. apart. Lastly, by using only the two ends, the drills will be 18 in. apart.

48



The seed may be expeditiously covered by using the tool with the points upwards.

I remain, Sir, &c.

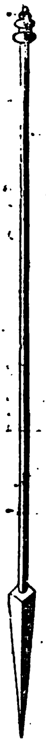
Catsfield Rectory, Sussex, April 5. 1830. A. H.

Art. VIII. *Iron Stakes, adapted for supporting Rose Plants, &c.*

By Mr. J. Hislop.

Sir,

I herewith send you a sketch (*figs.* 49, 50.) of a very useful sort of articles, which from their utility (to say nothing of economy) deserve to be more generally known; I mean, iron stakes for tall plants. No gardener, I am persuaded, requires any argument to convince him of their great superiority to wood: from experience I find them particularly well adapted for standard roses, and all the tribe of tall-growing new fuchsias, georginas, or in fact any tall plant that requires protection against high winds.



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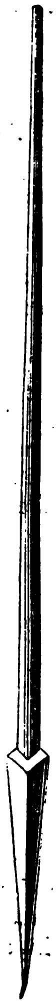

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I have often felt the ill effects of trusting to wooden stakes. When the wood gets partially decayed, and a sudden high wind comes on, both plant and stake go to the ground, and leave one only to regret it was not staked with iron. So much for utility. In an ornamental garden it will readily be granted that sightliness is of some consequence, and many a beautiful plant has to submit to be tied to a supporter which is a foil to its beauties and an eyesore to both owner and cultivator. The iron stake brought into more extensive use will obviate these objections.

I must deprecate the wrath of every angry critic, if I mention that these stakes are manufactured in great numbers by Messrs. Cottam and Hallen, Winsley Street: — cast-iron, from 4 to 7 ft., 13*s.* to 25*s.* per dozen; wrought iron, 2 to 6½ ft., 5*s.* to 10*s.* 6*d.* per dozen.

I am, Sir, yours, &c.

J. Hislop.

Ashtead Park, Nov. 16. 1830.

Art. IX. *On Heath-Mould and Peat.* By J. D.

Sir,

In writings and conversations on gardening, I have usually found the synonymous terms *peat*, *peat-earth*, and *bog-earth*, employed to designate that particular kind of soil in which the British species of heath, the Cape heaths, and the North American plants, thrive so perfectly. That this kind of soil, which, till taught better by some correspondent, I shall call *heath-mould*, is distinct enough from *peat*, the following characters of each will evince.

Heath-mould is the soil which occurs on heaths; sites not extremely wet and low, as bogs are, but usually elevated, and, in consequence of their elevation, well drained, and exposed to the scorching suns of summer and the withering blasts of winter. The stratum or layer of soil is usually less than 12 inches in thickness, lying on a stony subsoil, and both the soil and subsoil of so sterile a quality as to forbid tillage; yielding usually a tough thickly woven turf, and heath, or ling, and furze in abundance, with occasional brambles, and low stunted specimens of other species of shrubs or trees. This stratum, taken off so as to leave the stones bare, forms, when partially decomposed and comminuted, the invaluable and indispensable soil for innumerable plants of the garden; and is composed of the decaying turf with its spongy interwoven roots, a highly friable black soil, and a plentiful admixture of small-grained white sand. The blackness of the soil is, doubtless, partly owing to the perpetually progressive rotting of the exuviæ continually supplied by the growing turf, and which decaying exuviæ, besides the blackness, give to the soil also, in no small degree, the properties of leaf or vegetable mould. From, then, the spongy masses of vegetable fibres, the friable nature of the soil in itself, the decomposed vegetable matter, and the large proportion of white sand which *heath-mould* contains, arises its peculiar eligibility for all plants with delicate hairlike roots, and consequently for the *Eríceæ* vèræ, the *Eríceæ Rhodoràceæ*, &c., whose roots have, more aptly than elegantly, been compared to shag tobacco.

Peat-earth, or *bog-earth*, on the contrary, is the soil yielded by fens, turbaries, bogs, and morasses. It constitutes almost the entire soil of the fens of Lincolnshire and Cambridgeshire, and is, in fact, the soil forming the turf, of which so many millions are annually dug, sold, and burnt, as an article of domestic fuel, in those counties. Peat, instead of being in a thin stratum, forms a stratum always of considerable, sometimes of great depth; instead of occupying high sites, occupies the lowest; instead of being well drained, is usually saturated with water to the very roots of the herbage it bears; instead of a draining stony subsoil, stones are almost totally absent from it, and the subsoil is a water-holding clay. Although, like heath-mould, the surface soil exhibits spongy masses of fibres, it lacks the sand which prevails in heath-mould; and, when wet, is not friable, but oozy and soapy. Heath-mould, by means of its dry nature, its vegetable fibre, and its sand, is disposed to continue light, open, and porous: peat, from its muddy adhesive nature, the great rapidity with which vegetable fibre decays in it, its lack of sand, or from other causes, speedily subsides into a dense, inert, coagulate mass. While heath-mould is most important to the gardener, peat is not only totally unfit for, but even inimical to, most of the purposes of floriculture; although, as nothing in nature is left unused, it is the very soil in which willows, many grasses, the rushes, the sedges, and similar families, thrive and luxuriate.

If my brother gardeners admit the distinction I have striven to show, I hope they will adopt it.

I am, Sir, &c.

Feb. 16. 1831. J. D.

Art. X. *An Account of the Application of hot Water to heating the centre Bed in a Hot-house, in lieu of Tan.* By J. T. Alcock, Esq., of Mount Hill, Caermarthenshire.

Sir,

According to your desire, I send you a more detailed account of the application of hot water to heating the central bed in a hot-house, in lieu of tan, or any other fermenting matter.

From the reservoir (*fig.* 51. *a*) I branched a small delivering pipe (*b*) 1¾ in. in diameter, which was continued to the opposite angle of the bed, where it formed a dip of 10 in. at *c*, and returned to the reservoir at *d*. I then constructed laterals of ¾ in. leaden pipe (*e*), which were soldered into the delivering branch at 8 in. apart, and, having crossed the bed, dipped into the returning branch as at *c*. The space underneath was previously filled up with small stones and gravel, with about 2 in. of sand on the surface, on which the pipes were placed. The whole was then covered with sand, about 4 in. deep, and it worked admirably.

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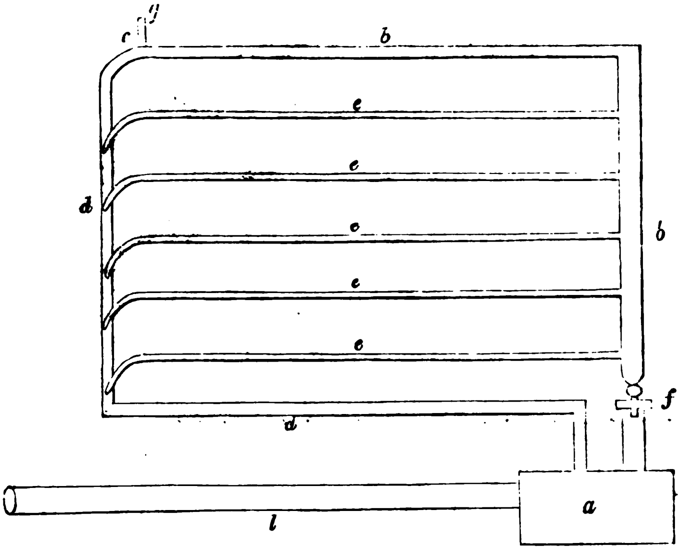

a, The reservoir of the main circulation.
b, Delivering pipe of the branch circulation, 1¾ in. in diameter.
c, The dip into returning pipe. *d*, Returning pipe, entering reservoir at bottom.
e, Branches of ¾ in. pipe from delivering pipe, dipping into returning one.
f, Stopcock, to prevent the circulation, if necessary.
g, Air-pipe; not necessary, unless the bed were large. (Vol. IV. p. 18.)
l, Delivering pipe of main circulation.

I had previously tried to heat the hot-bed by a branch from the reservoir, of equal-sized piping (see Chabannes's apparatus in Vol. IV. p. 29. fig. 30.); but, after many fruitless attempts, I found it impossible to get the water to circulate, notwithstanding I bored the pipes in several places, and inserted tubes, as described by Mr. Cottam (Vol. IV. p. 18.), which nevertheless evidently assisted in extending the heat. Had the main circulation been constructed on the principle of pressure, no doubt it would have answered. I was therefore compelled to alter the plan, according to that above, which was attended with the most perfect success. Having thus realised bottom heat, my next object was to attain the required moisture. I accordingly extended the pipe which conveys water into the house for the plants at the back of the bed (*fig.* 52. *h*), and soldered into it small shoulders with stopcocks (*i*). To these are affixed copper tubes (*k*), about three eighths of an inch in diameter, which being punctured laterally, I can flood the bed at pleasure, and afford it more or less moisture as may be required. The tubes, which remove off and on, lie embedded on the surface of the sand. The pots stand upon them as on any other portion of the

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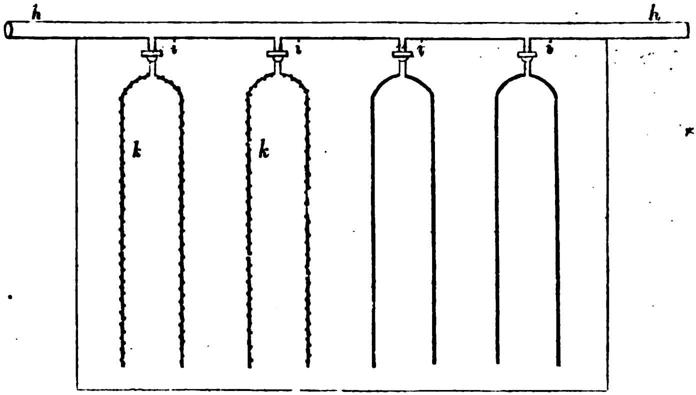

h, Pipe from water casks outside, continued on at back of centre bed.
i, Small shoulders, soldered in, and stopcocks affixed.
k, Copper tubes, which fit the shoulders, and are removable at pleasure. These are punctured laterally, to disperse the water.

bed, without an inch of space being lost; and the moisture is dispensed around and beneath them. Nothing can exceed the health of the plants on this bed, which are chiefly seedlings and offsets of the Amaryllid*eæ*, and certainly revel in their situation. Suffused with a refreshing dew in the morning, they have continued to grow vigorously during the winter, forcing their roots perpetually through the bottom of the pots into the sand. I see nothing to prevent this principle being applied to all the purposes for which moist heat is necessary; to retain which in a lively state, without risk (not to say a word of its annoyance and expense), costs the gardener more trouble and anxiety than all his other avocations. The apparatus has been at work since last autumn. It might be necessary, where water is scarce, to have a more retentive substratum than that which I have adopted, as in warm weather the evaporation would, no doubt, be very considerable. The grand object is to preserve the moisture, without which the whole plan would be futile. I cannot help ascribing the failure of the numerous schemes for attaining moist bottom heat, except from fermenting matter, to the capricious and partial application of the means adopted to produce and maintain the moisture. The thing is either overdone or not done at all; hence we have baking in one spot and damp chill in another: but by means of these tubes the water, from its pressure from without, is dispensed evenly throughout the bed, and that without further trouble than turning a stopcock.

I had intended to say a few words as to the advantage I derived from having adopted an additional circulation round the stove, which, although of small diameter, realised every desideratum during the late frost. This circulation branches from the main delivering pipe, close to the boiler, about 1 ft. from which it enters the returning pipe, without passing through the reservoir. There are stopcocks at each point of junction, which enable you to command this addition of heat in a few minutes. On a future occasion I may trouble you with my ideas more at large on this subject.

I am, Sir, &c.
John Trevor Alcock.

Mount Hill, April 22. 1826.

Art. XI. *Description of Meridian Pits for the Purposes of Horticulture or Floriculture.* By Mr. D. D. Neeve.

Sir,

According to promise, I transmit the plans, elevations, and sections of a series of three meridian pits. I do not send them forth as a new invention, but as an improvement on an old principle seldom practised; which seems strange to me, as they are decidedly superior to those generally adopted.

Having frequently had occasion to visit noblemen's and gentlemen's gardens and melon grounds, &c., I have as frequently lamented that the pine, melon, and cucumber pits should, on account of the unsightly appearance of the dung, &c., be kept apart from the gardens, the proprietor thereby losing the pleasure of seeing the pits when the plants are in full blossom and fruit.

Now, Sir, by adopting the improvement which I am about to suggest, I think they would become an object of attraction rather than not; and as some of your readers may not understand the drawings sent herewith, it may be advisable to give a short description of them.

Fig. 53. *a a a* represent plans for six pits; the spaces between each, being filled with dung to a given height, may then be covered with planks, the centre of which should have a small cast-iron channel (*b b*) to take off the rain and drip from the pits, by which means the walks may be kept perfectly dry. To make it more complete, the planks should be covered with gravel, which would not only bestow a natural appearance, but also would prevent the heat escaping except in the pits; and the dung would retain its heat much longer by being excluded from the external atmosphere. *c c* are pipes

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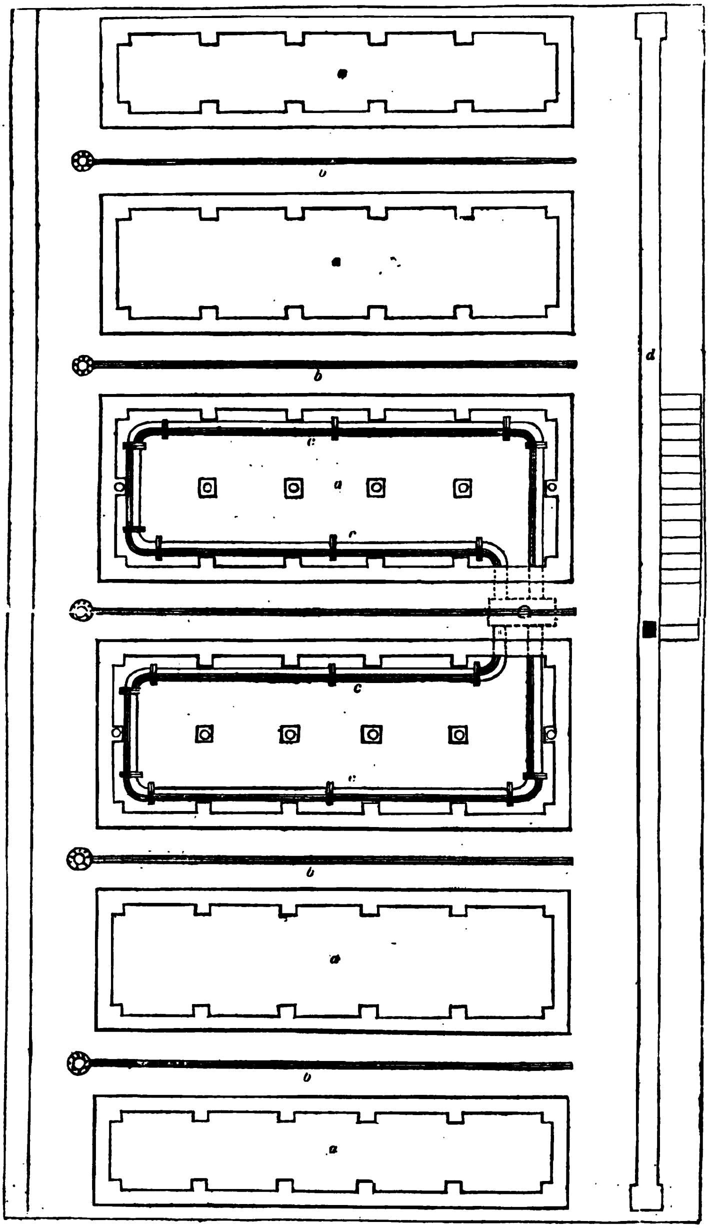

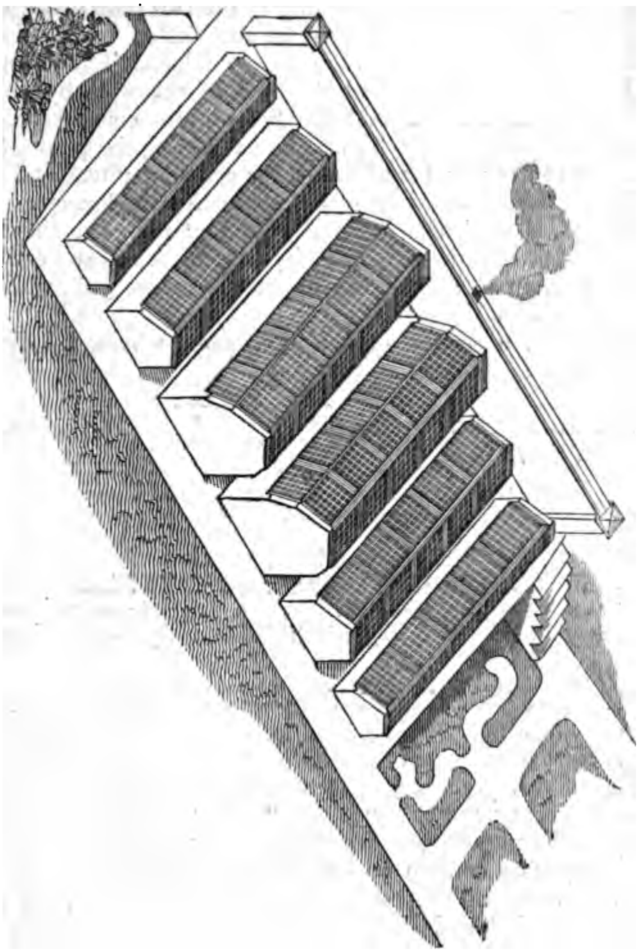

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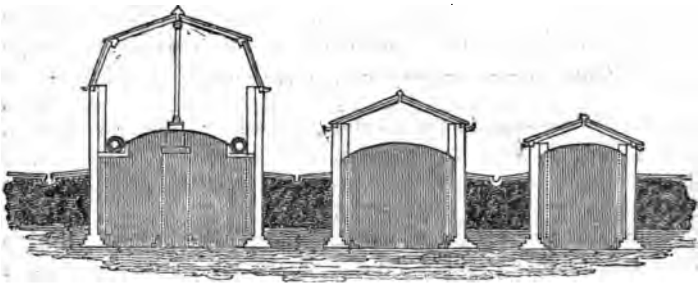

for hot water, to assist the heating of the two pine pits. The position of the boiler is shown by the dotted lines. *d* is a wall to shelter the pits from the north wind, &c. The entrance to the furnace should be at the back of this wall, by which means gardeners may attend the fire without coming in contact with any company who may be examining the plants, &c. The two centre pits may be used for growing pines, and the others for melons and cucumbers, or for forcing flowers.

Fig. 54. is an isometrical projection of the pits, showing the inclination of them. The steps are to be at each end, to enable persons to ascend the upper or terrace walk without passing between the pits.

Fig. 55. is a section of half the range, which, I believe, requires no explanation.

I am, Sir, &c.

6. *Wyndham Street, London,* D. D. Neeve.
Feb. 7. 1831.

Art. XII. *Plan of a Double Cottage, uniting the Picturesque with internal Comfort. With Introductory Remarks on the present State of Labourers' Cottages in Wiltshire.* By Selim.

Sir,

My object in this letter is to notice the subject of labourers' cottages, to which you invite the attention of your readers. It is a subject of great importance to the happiness and comfort of the labouring classes, whose miserable habitations certainly stand in great need of a "*reform.*" In this neighbourhood, many of the cottages are little better than the farmers' stables; they frequently contain only a sitting-room and loft: in the latter of which all the members of the family sleep, old and young, married and single, sick and whole, and, as I have known in many instances, the living by the dead. But the misery is not confined to the bed-room: the lower apartment is very frequently a damp, cold, wretched hole, without a single convenience; often with a mud floor, which is always damp. Indeed, I have seen a spring rising in the room. It is also the receptacle for every thing: wood in one corner, potatoes in another, dirty clothes, mixed with pots and pans, in another; so that any approach to tidiness is quite out of the question; and, as the floor cannot be washed, even common cleanliness is equally impossible.

Now, for this abode of wretchedness, which has, I find, a very demoralising effect on the character of its inmates, I would substitute decent comfort, though not the luxurious "cottage of gentility," with its two water-closets, hot air, &c., which you proposed in a late Number, and which is only suited to that improved condition of the lower orders to which you seem to look forward. Until they arrive at that state, I would propose practicable and cheap plans of improvement, suited to their present state; for these only are likely to be effected. I would make the houses comfortable and convenient, and such as a poor man ought to have in a country like this. I would have in a village cottages of several sizes, suited to different families. All should have a good warm living-room (parlours are useless to the poor), a wash-house and pantry, with two, three, and in some cases, four bed-rooms, and an out place for wood, coal, &c. This is all a labourer requires, as far as the house is concerned. To each house I would add a good garden and pigsty; for every poor man should keep a pig: and to some cottages I would allot land enough to keep a cow, that those who are saving and industrious might have the chance of improving their condition. By this plan all the families in a parish would be properly accommodated: for as one family became larger, another would become smaller by death, &c.; so that I would move the families accordingly, that each might have the number of bed-rooms required. Now, all this is practicable in most parishes, especially in those which are wholly the property of one landlord; and I am convinced that 50*l.* or 60*l.* a quarter, properly expended, would soon effect all that I have stated above in a moderate-sized village.

I live in a village which is a remarkably pretty one, and I am a great lover of the picturesque, which I would carefully preserve on the outside of cottages. I give a plan (*figs.* 56. 57.) for a double cottage; and, if you think it worth notice, I will forward some more which I have by me. [We shall be most happy to receive them.]

In this plan (*fig.* 57.) of a double cottage, uniting the picturesque with internal comfort, the larger house would accommodate a family with children of both sexes: it contains three bed-rooms. If the children were numerous, they might sleep in the two upper rooms; the parents in that below. There is a lean-to to this cottage, containing the pantry (*a*), and wood-house (*b*): the latter would hold fuel, and all the tubs, pans, &c.; so that the wash-house (*c*) might be always clean and tidy. There might be a store-closet under the stairs (*d*). There is a copper in the wash-house, and an oven by the fire; and the house would be sufficient for a family keeping a cow.

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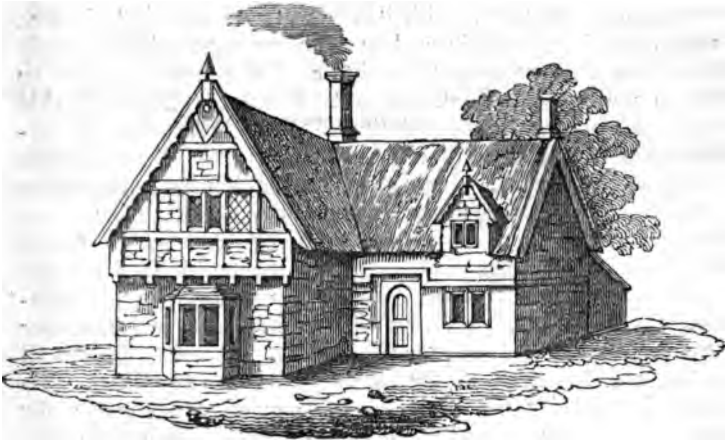

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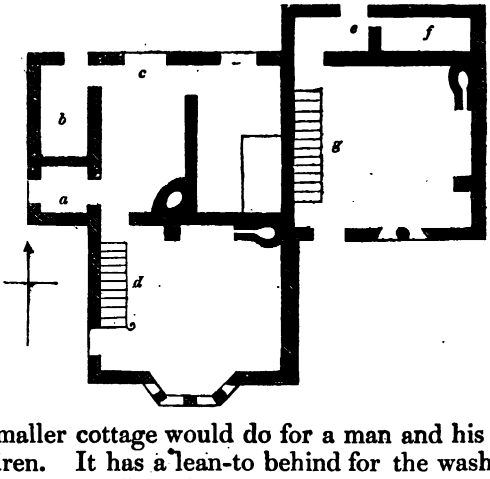

The smaller cottage would do for a man and his wife without children. It has a lean-to behind for the wash-house (*e*) and wood-house (*f*), and an oven by the fire, and pantry under the stairs (*g*).

The cottage is supposed to be built of stone or brick, or if of both the more picturesque. The string course over the door and window of the smaller house might be a row of projecting bricks. The upper story of the front table is supposed of wooden framework, filled up with brick or plaster, and is for effect. The framework might be made of the thinnings of fir plantations squared. The windows are supposed to have stone mullions; but wooden mullions might be made like the stone ones, as seen in old houses.

The plan is suited to a man of fortune wishing for pretty and comfortable cottages upon his estate; and it would look well upon a gentle eminence, with wood behind. The lower rooms should be 8 ft. high, and the floor raised at least 1 ft. above the surface of the ground it stands on.

Yours, &c.

Salisbury, Jan. 1831. SELIM.

ART. XIII. *Observations made during an Arboricultural Tour in Scotland and England, during the Autumn of the Year* 1830. By Mr. E. MURPHY, Agent to the Arboricultural and Horticultural Societies of Ireland.

Sir,

IN conversation with you in November last, I gave you to understand what were my impressions respecting the state of arboricultural science in those parts of England and Scotland which I had recently visited. I then informed you that I could by no means agree with the author of the *Planter's Guide*, in asserting that ignorance on arboricultural subjects is universal, or even general, amongst the Scotch gardeners; for, on the contrary, many of those with whom I conversed understood all the principles of the science necessary to insure a correct practice; yet that, owing to those men being in many instances prevented by their employers from carrying this knowledge into execution, my expectations that I should there find in all or most cases a scientific management of wooded lands was, I regretted to be obliged to say, miserably disappointed. In one place, extensive fir woods of 30 or 40 years' standing, which had been planted very close, have never been thinned; and the trees, I need not say, are long since destroyed: in another place, a thousand acres of coppice are suffered to produce only brushwood, for want of a little care by which it might be rendered very valuable. Here pruning has been altogether neglected, and oaks which were planted with a view to become timber are only fit to be cut over for coppice: there the barbarous system of pruning recommended in Pontey's *Forest Pruner* has been adopted; and oak trees, which have been divested of their branches for 25 ft. or 30 ft. from the ground, exhibit a spectacle not easily forgotten.

Fortunately, however, the lamentable neglect and mismanagement here complained of are not in Scotland, as they are in Ireland, almost universal; there are many and honourable exceptions: but great pleasure as it would give me to point them out, I shall, for obvious reasons, refrain from doing so. In one branch of arboriculture, namely, the removal of large trees, the Scotch gardeners who have had occasion to exercise it have been eminently successful. The limits which I have proposed to myself in this sketch (which may, perhaps, be filled up on some future occasion) do not permit me to enter into much detail: but, amongst others who have practised this art, I cannot avoid mentioning Mr. M'Nab of the Edinburgh botanic garden, whose trees, by far the largest which, so far as I could learn, have ever been removed in Scotland, are, with an exception or two, thriving prodigiously. It is worthy of remark, that, in noticing this extraordinary feat in arboriculture, Sir Henry Steuart prophesies that, as these trees were not previously prepared for removal, they will remain stationary for a number of years, until they have acquired what he has designated protecting properties, before they commence growing. They, however, did not remain stationary for a single season; and of the fact I made myself certain by taking the admeasurement of them, and comparing it with that given at p. 415. of the second edition of the *Planter's Guide*. Mr. Stuart of Pinkey, near Edinburgh, has also been most successful in this branch of arboriculture: his practice has been very extensive; and I look upon him as possessing a knowledge of arboriculture inferior to that of none with whom I have ever had the pleasure to converse.

Mr. Ross, gardener to the Duke of Athol at Dunkeld, has not only been successful in the removal of large trees at the ordinary seasons; but even, when it became necessary, owing to some alterations which could not be deferred, in removing large deciduous trees in June, July, and August, performing the operation with perfect success. I shall only mention Mr. Bishop of Methven Castle, for the purpose of referring to his essay on this subject, which was honoured by the Highland Society, and published in their *Transactions;* and which will convey a much more distinct notion of his acquirements in this art than any thing I could say.

In England, also, I had an opportunity of observing some very interesting examples of the successful performance of this art. It has been most extensively and successfully practised for a great number of years, by Mr. Gregor, forester at Eaton Hall in Cheshire; to notice whose operations in this way would extend this letter far beyond its due limits. Suffice it to say, that his trees are remarkably beautiful; and that even in the removal of enormous Lucombe's oaks, the most difficult trees (Mr. Gregor informed me) to be transplanted, he has experienced no difficulty. I cannot conclude these unconnected observations without a reference to the success in this art of Mr. Paxton, gardener to His Grace the Duke of Devonshire, at Chatsworth in Derbyshire. We all recollect to have seen in the English newspapers an account of the removal of an enormous weeping ash, which was conveyed for a great many miles by the united strength of a number of men and horses; that it was necessary to remove the turnpikes along the line of road by which it was brought to Chatsworth; and that a breach had to be made in the demesne wall, the gate being too small to admit it. Nor was this account exaggerated. The tree was planted, and that, too, in an unfavourable situation (the area of a wing of the palace); yet it is thriving, having made shoots 12 in. long the first season. Mr. Paxton does not approve of the "retaining basin" formed by Sir Henry Steuart for supporting trees; his reason is, that, in a retentive soil particularly, it is liable to retain water about the roots, to the manifest injury of the tree. To obviate this inconvenience, he fastens three strong stakes in the ground, in the angles of an equilateral triangle; and, having spread out the roots, lays three pieces of wood across them; which pieces, on being made fast to the strong perpendicular stakes, are found most effective in retaining the tree in an upright position. In this way Mr. Paxton has transplanted some trees of great magnitude; one, in particular, which was removed about five years ago, and which was then near a century old, though in an exposed situation, has "stood the pelting of the pitiless storm."

All the persons whose operations I have taken the liberty to notice have uniformly removed large trees on the "preservative system." But, after all, the removal of large trees, though interesting, is comparatively an unimportant branch of arboriculture. With much greater satisfaction should I, had I been fortunate enough to discover it, hold up, for the example of the proprietors of wooded lands in Ireland, a perfectly correct system of managing woods and plantations intended solely for profit; but this, near as some of the approximations were to it, I did not observe: and, were it not that I should render myself liable to the charge of presumption, I would earnestly reiterate the advice of Sir Henry Steuart, by recommending to the consideration of the enlightened proprietors of wooded lands in Scotland the formation of a society which shall have for its objects the advancement of arboricultural science only. Such a society, conducted on the model of the Highland Society, and encouraged, as no doubt it would be in that highly improved country, could not fail to be productive of great and permanent utility.

It was my intention to compress whatever I had to say on the state of arboriculture in England into this letter, but fear it would lead me farther than you might feel inclined to follow me; I shall, therefore, reserve it for a future occasion, when, after noticing the plantations and seminaries of His Grace the Duke of Portland at Welbeck, I shall make a few observations on the management of the plantations in the New Forest. In doing this, I fear I shall be found to differ very materially, in the view I have taken of it, from that of Mr. Davis and others, whose reports on the state of this forest are before the public. Be this as it may, I shall give you my opinion, as formed on a cursory examination of it. Should this opinion be erroneous (which, from the imperfect means of forming it, is by no means unlikely), I shall feel most thankful to any person who will take the trouble to set me right.

I am, Sir, yours, &c.

90. *Abbey Street, Dublin, March* 7. 1831. E. Murphy.

Art. XIV. *Plan and select Lists of Plants for a Flower-Garden, in the ancient Style.* The Plan by C. D., and the List of Plants by Mr. W. Baillie, of Dropmore Gardens.

A friend having requested a plan and a list of plants for a piece of ground to be used as a flower-garden, or rather flower-border, C. D. prepared two plans, one in the ancient, the other in the modern style; we had them engraved, and sent copies to three eminent gardeners, requesting them to furnish us with lists. This they have done; and we shall now present those for the plan in the ancient or geometric style. (*fig.* 58.)

The situation of this flower-garden is somewhat peculiar, it being in fact more properly a border of garden embroidery, on a lawn which terminates at a short distance in scattered old trees and full grown shrubs. To give an idea of the localities, it may be necessary to begin with the following references: —

a, Library. *b*, Music room. *c*, Conservatory.

d, Kitchen-garden, enclosed by a wall with battlements.

e, Group of one kind of plant, no matter what, separated from the groups in the same compartment by lines of garden pinks; which plant is preferred in order that the division lines may be green all the winter. *f*, Lawn.

g, Stockhole, with a pedestal and vase over.

h, A collection of *R*òsa semperflòrens, Noisettes, &c.

i, Arcades of trellis-work for creepers.

k, Sloping ascent to terrace walk. *l*, Terrace walk.

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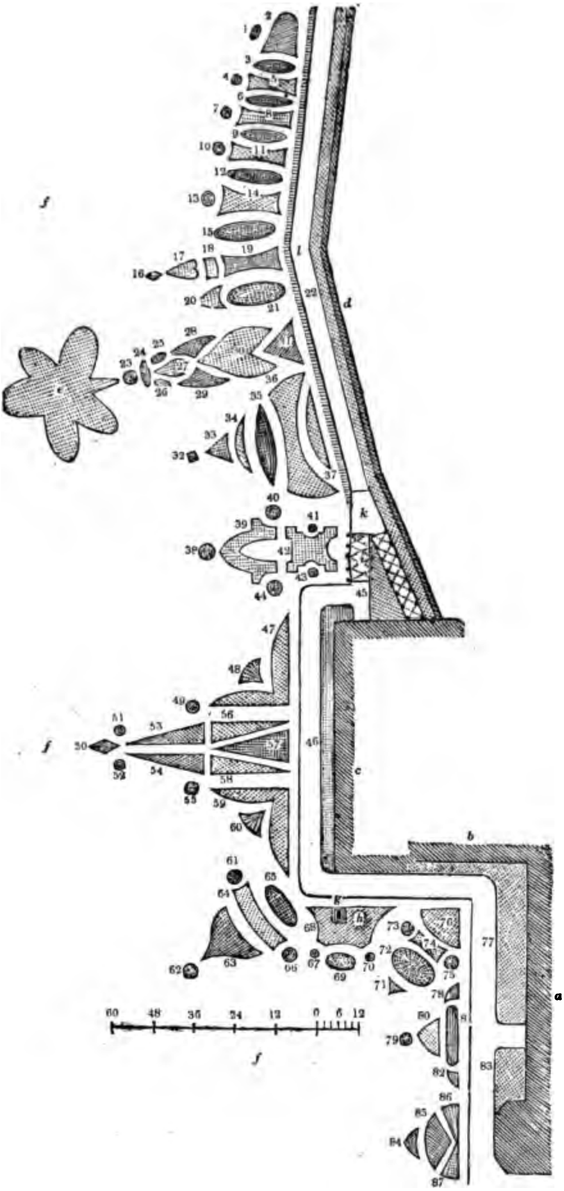

List of Plants. — Mr. Baillie observes: — "In making out the lists, my chief object has been to enumerate such plants as continue for some length of time in bloom; and which are at the same time neither too expensive nor difficult of propagation. Some of the groups, therefore, may not harmonise so well in colour and symmetry as is desirable; but this defect can be easily remedied on the spot. In a few instances, in the winter and spring list, I have mentioned the plunging of some of the bulbs in pots; and I think the practice is not so much attended to as it deserves. By potting a quantity of bulbs of every description in the autumn, and plunging them in the beds in which they are to flower, and, as soon as the flowering is over, taking them up and replunging them in the reserve ground to perfect their foliage, we gain a month at least in the length of the summer season; a consideration of some importance even in this climate."

	Plants for Summer and Autumn.		*Plants for Winter and Spring.*
1.	Lobèl*ia* unidentàta.	1.	*S*cílla amœˋna.
2.	Heliánthemum.	2.	Heliánthemum.
3.	Pelargònium Bethelìnum.	3.	*O*ˊxalis cérnua, plunged in pots.
4.	*A*nagállis grandiflòra.	4.	*S*cílla præˋcox.
5.	Pentstèmon pulchéllus.	5.	Pentstèmon pulchéllus.
6.	Commelìn*a* cœléstis.	6.	*Tùlipa* Gesner*iàna* plèna lùtea.
7.	*A*nagállis Monéll*i*.	7.	*N*arcíssus mìnor.
8.	*R*òsa damascèna.	8.	*N*arcíssus *Jonquílla* plèna.
9.	Pelargònium concínnum.	9.	*Tùlipa* suavèolens.
10.	*D*áphne *C*neòrum.	10.	*D*áphne *C*neòrum.
11.	Diánthus Caryophýllus (carnation).	11.	Diánthus Caryophýllus (carnation).
12.	Tropæˋolum mìnus flòre plèno.	12.	*H*yacínthu*s* orientàlis.
13.	Pelargŏnium ínquinans var. Frogmore Scarlet.	13.	*C*ròcus versícolor.
14.	Campánula pyramidàlis.	14.	Campánula pyramidàlis.
15.	*R*òsa índica álba.	15.	*N*arcíssus orientàlis.
16.	*S*enècio élegans flòre plèno.	16.	*C*ròcus vérnus.
17.	Fúchs*ia* coccínea.	17.	*L*eucòjum vérnum.
18.	Diánthus Caryophýllus (clove).	18.	Diánthus Caryophýllus (clove).
19.	Pelargònium Davey*ànum*.	19.	*Tùlipa* Gesner*iàna*, scarlet var.
20.	Tigrídia Pavòn*ia*.	20.	Tigrídia Pavòn*ia*.
21.	*R*òsa centifòl., *R*esèda odoràta.	21.	*N*arcíssus itálicus.
22.	A mingled flower-border.	22.	A mingled flower-border.
23.	Bouvárd*ia* triphýlla.	23.	*H*yacínthu*s* orientàlis fl. pl. álb.
24.	*Œ*nothèra missouriénsis.	24.	*N*arcíssus calathìnus.
25.	Calceolària rugòsa.	25.	*Tùlipa* óculus sòlis.
26.	Calceolària integrifòlia.	26.	*Tùlipa* Gesner*iàna* v. Clarimond.
27.	*L*ýchnis chalcedónica fl. plèno.	27.	*L*ýchnis chalcedónica fl. plèno.
28.	*D*elphínium grandiflòrum símplex.	28	*D*elphínium grandiflòrum símplex.
29.	*D*elphínium grandiflòrum plènum.	29.	*D*elphínium grandiflòrum plènum.
30.	Georgìn*a*, *L*ílium, *P*æòn*ia*.	30.	Various early-flowering bulbs.
31.	Pelargònium Fothergíll*i*.	31.	*N*arcíssus *Tazzétta*.
32.	Lobèl*ia* unidentàta.	32.	Erythrònium Déns cànis.
33.	*Œ*nothèra macrocárpa.	33.	*N*arcíssus Bulbocòdium.
34.	*H*ésperis matronàlis plèna álba.	43.	*H*ésperis matronàlis plèna álba.

35. Matthìol*a* incàna or ánnua.	35. Matthìol*a* incàna or ánnua.
36. *R*òsa provinciàlis, *R*esèda odoràta.	36. *S*cílla campanulàta.
37. *H*eliotròpium peruviànum.	37. *L*eucòjum æstìvum.
38. *V*erbèna Lambérti.	38. *Tùlipa* Gesneri*àna* plèna lùtea.
39. Fúchs*ia* grácilis.	39. *N*arcíssus poéticus.
40. *V*erbèna Aublèt*ia*.	40. *Tùlipa* Gesneri*àna* plèna rùbra.
41. *P*æòn*ia* *Moútan* *p*apaveràcea.	41. *P*æòn*ia* *Moútan* *p*apaveràcea.
42. *P*æòn*ia* edùlis var., in the centre Georgìn*a*.	42. *P*æòn*ia* edùlis v., various bulbs, &c.
43. *P*æòn*ia* *Moútan* ròsea.	43. *P*æòn*ia* *Moútan* ròsea.
44. *V*erbèna *Melíndres*.	44. *Tùlipa* Gesneri*àna*, double-striped.
45. A mingled flower-border.	45. A mingled flower-border.
46. A mingled flower-border.	46. A mingled flower-border.
47. Herbaceous plants, choice annuals, &c.	47. Herbaceous plants, early and late bulbs.
48. *G*ladìolus cardinàlis.	48. *L*eucòjum vérnum in pots.
49. Lobèl*ia* spléndens.	49. *H*yacínthu*s* orientàlis pl. rùber.
50. *R*òsa semperflòrens plèna.	50. *C*ròcus biflòrus.
51. Pelargònium zonàle, scarlet-flowered variegated.	51. *H*yacínthu*s* orientàlis pl. rùber.
52. Pelargònium latéripes, pink-flowered ivy-leaved.	52. *H*yacínthu*s* orientàlis plènus cærùleus.
53. *R*òsa índica mìnor, *R*esèda odoràta.	53. *N*arcíssus pulchéllus.
54. Rose de Meaux, *R*esèda odoràta.	54. *N*arcíssus triándrus.
55. Lobèl*ia* fúlgens.	55. *H*yacínthu*s* orientàlis pl. rùber.
56. Pelargònium zonàle.	56. *Tùlipa* Gesneri*àna* var.
57. *R*òsa índica, *R*esèda odoràta, &c.	57. *N*arcíssus *Jonquílla* símplex.
58. Pelargònium ínquinans.	58. *Tùlipa* Gesneri*àna* var.
59. Selected herbaceous plants and choice annuals.	59. Selected herbaceous plants, early bulbs, &c.
60. *G*ladìolus cardinàlis.	60. *L*eucòjum vérnum in pots.
61. Linària alpìna.	61. *A*nemòne pavonìna.
62. Hepática tríloba.	62. Hepática tríloba.
63. Hydrángea horténsis.	63. *S*cílla, *L*eucòjum, *L*ílium, and similar bulbs.
64. *D*elphínium Ajàc*is*, Coreópsis tinctòria.	64. *D*elphínium Ajàc*is*, sown in February.
65. *R*esèda odoràta.	65. *N*arcíssus *p*apyràceus.
66. Lobèl*ia* lùtea.	66. *A*nemòne horténsis.
67. *P*æòn*ia* *Moútan* Bánks*ii*.	67. Eránthis hyemàlis.
68. *R*òsa spinosíssima, selected.	68. *R*òsa spinosíssima, selected.
69. *C*ydònia speciòsa.	69. *C*ydònia speciòsa.
70. *P*æòn*ia* *Moútan*.	70. *A*nemòne apennìna.
71. Clárk*ia* pulchélla.	71. Galánthus nivàlis.
72. Herbaceous plants, Brompton stock, &c.	72. Herbaceous plants, early bulbs, &c.
73. *V*erbèna pulchélla.	73. *H*yacínthu*s* orientàlis pl. rùber.
74. Diánthus chinénsis.	74. Diánthus chinénsis.
75. *V*erbèna *Melíndres*.	75. *H*yacínthu*s* orientàlis plènus cærùleus.
76. *H*eliotròpium corymbòsum.	76. *I*xia crocàta, plunged in pots.
77. Herbaceous border of choice plants.	77. Herbaceous border, early and late bulbs, &c.
78. Alonsò*a* incisifòlia.	78. *R*anúnculus asiáticus.
79. Pelargònium zonàle, pink ivy-leaved var.	79. *I*xia fenestràlis, plunged in pots.

80. Matthìol*a* incàna v. coccínea.	80. Matthìol*a* incàna var. coccínea.
81. Diánthus horténsis.	81. Diánthus horténsis.
82. Lobèl*ia* decúmbens.	82. *A*nemòne coronària plèna.
83. Lobèl*ia* cardinàlis.	83. *Tùlipa* Gesneri*àna* plèna lùtea.
84. *V*ìola amœ`na.	84. *V*ìola amœ`na.
85. Pelargònium zonàle, scarlet variegated.	85. *A*nemòne coronària símplex.
86. *A*nemòne pavonìna, Isótoma axillàris.	86. *A*nemòne pavonìna.
87. *A*nemòne horténsis símplex, Helióphila *a*raböìdes.	87. *A*nemòne horténsis símplex.

The mass *e* to be separated with lines of pinks. The lobes may be filled as follows: — 1. Isótoma axillàris; 2. Scarlet Ten-weeks' Stock; 3. Campánula pentagònia; 4. Purple Ten-weeks' Stock; 5. Campánula carpáthica; 6. White Ten-weeks' Stock; the centre, of roses, mignonette, &c.

Art. XV. *On the Culture of the Cockscomb, with a Description of the Compost made use of.* By Mr. John Harrison, Gardener at Syston Park.

Sir,

In compliance with your request, I have great pleasure in communicating to you my mode of cultivating the cockscomb, with a description of the compost which I make use of; also the mode of preparing it for use, &c.

In the spring season I provide a quantity of swarth or turf from a pasture-field, which is pared off about 2 in. thick, where the soil is a strong rich loam; I form this into a pile 3 ft. high, laying the grass side downwards, covering each layer of turf 1 in. thick with equal quantities of decayed hot-bed manure, fresh droppings of horses, and swine's dung, clear from litter, and well incorporated.

In autumn I take down the pile, and cut the turf in pieces of 2 in. square, adding to three barrows of turf one barrow of decayed oak leaves or vegetable mould, and one barrow of sharp sandy bog earth, which are well mixed together, and formed into a shallow ridge, and frequently turned during winter, in order that the frost shall penetrate through the whole.

About the last week in February, or the beginning of March, having a hot-bed in readiness that has been well worked and fermented (which is a very essential point), I sow my seed very thin in No. 48-sized pots, being well drained, and filled with a compost consisting of one third part rich loamy earth, one third part leaf mould, and one sixth part sharp sandy bog mould, broken fine. The pots are plunged in the bed up to the rims, placing under each pot a piece of thin slate, to prevent any rancid steam from entering the bottom of the pots. As soon as the plants appear, they have a little water given them, and the pots are raised half way out of the dung, and the next day entirely to the top, giving as much air as will keep the temperature of the frame to 70° of heat, to prevent the plants being drawn up weak. The following day they are removed into the pine-stove for two or three days, to harden the plants previously to potting them off, placing them near the glass in the daytime, and lowering them down in the night.

I pot the plants singly into small-sized No. 60 pots, using the same sort of compost as they were sown in, always taking care to let the pots be well drained, and a little of the roughest earth put in the bottom.

The bed is well forked up to the depth of 1 ft. every four or five days, and watered, as necessity requires, with water of the same temperature as the heat in the frame, in order to keep the dung in a strong moist heat, the pots being kept constantly plunged up to the rims until the plants attain their full growth. They require very little water, which is always given over their heads with a fine rose watering-pot. In the middle of the day, when the sun is out, the lights are closed down for about a quarter of an hour, and the plants thinly shaded; observing at all times to admit double the quantity of air, for about a quarter of an hour previously to watering. The heads of the plants are kept near to the glass, and the temperature of the frame to 75° of heat.

As soon as the plants have rooted sufficiently, and before the roots get matted together, they are put into full-sized No. 60 pots, using the same sort of compost as before. I let them remain in these pots until they have formed their heads, when the strongest plants and the best shaped combs are selected, and potted into No. 48-sized pots, using, for the *first time*, the prepared compost of turf, &c., which is cut into pieces of a quarter of an inch square.

After the comb is formed, I never allow the roots of the plants to get entwined, but always remove them into larger pots as soon as the roots are sufficiently advanced, in order that they may receive no check whatever, but be kept constantly in a growing state; also carefully removing all side branches as they appear.

When the plants have rooted sufficiently in the No. 48-sized pots, they are then removed into No. 32s; and lastly into No. 24s, where they complete their growth, and will retain their heads perfect for several months, by receiving a diminished quantity of water, and being removed into the green-house or conservatory. I am, Sir, yours, &c.

JOHN HARRISON.

Syston Park, near Grantham, Dec. 10. 1829.

Art. XVI. *A Mode of growing Balsams to great Perfection.* By Mr. James Reed.

Sir,

I herewith send you, for the information of the readers of the Gardener's Magazine, my method of growing balsams to that state of perfection which we seldom see exhibited in our botanic green-houses.

In the first place, the selection of seed is of the greatest importance. From the seed, after being gathered from the finest and most double flowers, choose out the smallest or middle-sized that are round and plump, rejecting all the large ones, which I believe are generally sown in preference to the smaller, and which invariably produce the greatest quantity of single and semi-double flowers. About the 20th of February make up a hotbed of well prepared hot dung about 3 ft. high, for a small single-light frame. After the rankness of the dung has passed off, fill up the frame with good rich mould to within 6 inches of the glass; and on it, about the 1st of March, sow the seeds thinly, and cover them about a quarter of an inch or so. When the plants are up, they should not stand nearer to each other than 3 or 4 in.; one principal object being to give them a habit of stockiness. Give them abundance of air when the weather will permit, and apply a lining, if necessary; so as to keep up a good growing heat in the bed, and not to draw the plants. Cover at night with double mats, taking care not to confine any rank steam in the bed or frame. I have always left a small quantity of air at night, unless the heat has been upon the decline. At the time the seed is sown, make up another good bed with well worked dung for a three-light frame, or according to the quantity of plants to be grown, which will be in readiness to receive them by the time they require their first potting. This bed must be frequently stirred up, so as to let all rank steam pass off; after which place the frame on, and lay 3 or 4 inches of sifted coal ashes, sand, or any other sweet substance, for the plants to stand on. In taking up the plants, be careful to retain as much mould with the roots as possible, and place them in 60-sized pots, which are quite large enough for the first potting, taking care to shade and water them when requisite. Nothing more than lining the bed to keep up a brisk growing heat is wanted, covering at nights as before until the second potting, when it will be necessary to have a fresh bed made up a week before hand. Then pot the plants into larger pots according to their wants; shading and watering as before; and in fine weather supply them with plenty of air, still covering up at nights, and occasionally lining the bed with fresh worked dung when the heat declines, being careful not to admit any of the rank steam, which would immediately spoil them. After the plants have grown to as large a size as the second frame will admit of, give them their final potting into pots of from 10 to 12 in. in diameter at top, and set them in the hot, peach, pine, or green house for flowering, giving them abundance of water in very warm weather twice a day. By this management I have grown them from 5 to 5½ ft. high, completely feathered down to the pot, and producing the most noble effect with their various colours and most beautiful double flowers.

I remain, Sir, yours, &c.

James Reed.

Bridgewater Nursery, Dec. 7. 1830.

Art. XVII. *Observations on the Culture of American or Bog Plants and the* Orchideæ, *with some Hints on acclimatising Exotics.* By Mr. Thomas Appleby.

Sir,

The care of a gentleman's garden in this neighbourhood devolved upon me some years ago, in which was a large bed of American plants in nearly a dying state. They consisted of choice rhododendrons, azaleas, kalmias, andromedas, &c., and had been fine plants, but were then in a most deplorable condition as it appeared, from the want of moisture. The situation of the bed (over which I had no control) was peculiarly high and dry, being near some fine old elms, the roots of which penetrated to the bed, and dried up the soil. The compost in which they had been planted was a kind of real peat or bog earth, mixed with coarse sand, and was extremely difficult to moisten. The water either stood on the surface and evaporated, or ran off at the side and sank under the grass; so that, although I watered freely every evening, the hot sun on the surface, and the elm roots underneath, rendered all the labour abortive.

I then set to work, and procured some of what I considered proper soil for them; it is properly termed moor earth, being found on most moors. Like the other kind, it is black; but has this difference, it is thoroughly mixed with fine white sand, so much so as to have a shining appearance, and is more easily pervious to water. With this moor earth I formed the bed, after removing the old soil, and spread it about 6 in. thick on the bed. I was aware this was too thin, considering the situation; but I had another substance in view, which I expected would be equivalent to more than another 6 in.

This substance is moss: I procured it in large quantities from a rocky wood above Kirkstall Abbey: it comes off the rocks in large flakes, like fleeces of wool, and I have no doubt may be found in all similar places. With this moss I covered the surface of the bed about 2 in. thick, and gave a good watering. My expectations were not disappointed; the plants now stood the hottest sun without flagging, and in three or four weeks, began to grow freely, notwithstanding the rough operation they had undergone; this work having been done in the height of summer. The rhododendrons formed their buds in abundance for flowering the following year, and the azaleas, daphnes, kalmias, &c., put on that flourishing appearance which is the certain token of luxuriant health.

There was a peculiarity in their growth, which I may just notice. Wishing to increase some of the more rare species, on laying them down and covering the stems with the moss, I soon found that they threw out roots with suprising facility; the stems being covered as high as the moss with those fine white fibres for which this tribe of plants is so remarkable. This I entirely attributed to the cooling qualities of the moss, which, being congenial to the plants, and keeping the soil moist, greatly assisted me in that method of increasing them. Many of the shrubs, especially the rhododendrons, scattered their seeds, came up, and in two years were fit to transplant; so that I should think nurserymen would find moss useful in propagation.

There is a tribe of plants which, from the curious and surprising structure of the fructification, is well worthy of a place in the flower-garden; I mean the hardy Orchídeæ. Often desirous of cultivating them, it occurred to me that the bed covered with moss was a suitable situation. A few species were procured, planted, and grew very well: flowering a great deal finer than I ever saw them in a wild state, throwing up their beautiful flower-stems 15 to 18 in. high, and increasing at the roots three for one. That they succeeded so well was owing, no doubt, to the equal temperature of the soil under the moss, and to the dry subsoil which prevented the roots from rotting, the bed being a similar situation to that from which they had been brought; namely, a dry, hilly, and rather mossy pasture. This bed also suited all the hardy species of Prímula, especially P. farinòsa, a beautiful native, which flowered well, made large tufts, and shed its seeds profusely. These came up all over the bed, so that I was enabled to distribute some to different gardens in the neighbourhood; but they were soon lost for want of the cool moss and sandy peat in which they had been raised.

I also derived another benefit from using moss in the manner here described: it acted as a non-conductor of heat in summer, and of course it would do so in winter. Many tender plants that perished with me in the most favourable situations, without moss, here withstood the severest winter; for, where the moss was a good thickness (2 in.), the frost hardly ever penetrated through it. Fuchsias, Lobelias, *Sálvia índica*, the more tender alpine plants, the Cape bulbs, such as *I'xia*, *Gladìolus*, &c. (planted in October), and such plants as are classed as cold frame plants, stood the winter, and flourished well in the spring.

This bed, which was of a good size, formed, when in full beauty, a most interesting object. The American shrubs, *Orchídeæ*, tender exotics, alpine plants, and Cape bulbs, grew in irregular masses, and, with the moss underneath (which, when slightly watered, was of a most beautiful green), altogether made a most singular and beautiful appearance, and were much admired by every one that saw them. That moss had been used in horticulture before thought of by me is very likely, but I do not recollect ever reading of it, and am quite sure I never saw it used for the above purpose.

That it is useful as a protection from the heats of summer and cold of winter cannot be doubted from the above details; and that it would be greatly useful in acclimatising tender exotics is equally certain: for if the roots of any shrub or plant, however tender, can be preserved from frost in the open air, we have nearly accomplished our purpose; the plant will get more hardy year after year, until it flower and perfect seeds, which is one great step gained towards naturalisation.

Moss, where it can be procured in abundance, would also be useful in the kitchen and fruit garden, in hot dry weather, and on dry sandy soils, as a covering for vine borders, strawberry beds, newly planted crops, &c.; for, where it can be laid on in moderate thickness, it will not only keep off the rays of the sun, but, as moss will hold water almost as much as a sponge, once a week watering will do more good than every day where the sun has full power.

I am, Sir, &c.
THOMAS APPLEBY.

Horsforth Hall, Oct. 22. 1830.

ART. XVIII. *On the Bitter and Sweet Orange Trees cultivated in Italy.* By WILLIAM SPENCE, Esq. F.L.S.

Sir,

I SEIZE the opportunity of a private conveyance to send you a few seeds of the *Arancio forte*, or bitter orange, which is so great an ornament to the gardens of this part of Italy, in the hope that you will be able to transmit them to some horticultural amateur in Devonshire or Cornwall, who will take the trouble (if the experiment has not been already made) to raise a few of the plants, and try to acclimate them to that part of England, where there can be little doubt that they might be made to thrive nearly as well as at Florence. In the gardens round this latter city are many of these trees from 15 ft. to 20 ft. high, and with stems from 4 in. to 6 in. in diameter, which are planted in the open ground, and stand out without any protection except a sheltered situation, or the neighbourhood of a wall, all the winter, though the cold is often very severe and long-continued. Last winter, for example, my sons skaited at Florence in each of the four months of November, December (1829), January, and February (1830); a feat which they could never boast of achieving in England; and Fahrenheit's thermometer was repeatedly down to 26° and 24° at 8 A. M.; and had, therefore, probably been lower in the night, and yet the only injury which the bitter orange trees sustained was having the extremities of some of the young shoots turned yellow. In Devonshire and Cornwall, therefore, and probably along great part of the south coast of England, it would seem that these trees, if planted in sheltered situations, would run little risk of injury in ordinary winters, while in very severe ones they might be sufficiently protected by a covering of mats of thick straw, &c. If your readers could with me look into the garden of which the windows of the room where I am writing command a view, and see the scores of these trees resplendent, in this month of January, with their green leaves and golden fruit, they would, I think, agree with me as to the desirableness of introducing such an ornament into our gardens and shrubberies; in which view (and also as stocks to graft the sweet orange upon) it is the Italians chiefly cultivate them: for, though the first will make an excellent marmalade, like the Seville orange (to which it is nearly allied, if not the same variety), they make little use of it except as a sauce for fish, &c., and a detergent in washing the hands; for which purposes it is sold in the markets at the low price of one quattrino each, equal to five for three farthings English.

Having the pen in hand, I will add, by way of rendering this communication a little less meagre, such casual notices relative to the cultivation of the *sweet* oranges as have occurred to me during our various tours and residence in Italy.

Many travellers enter Italy with the persuasion that, as soon as they have fairly left the Alps behind them, they shall see orange groves in every garden; and in this expectation the vague information of tourists who speak of places so far north as the Borromean Isles in the Lago Maggiore, and the shores of the Lago di Garda, being thus ornamented, might certainly justify them. But though it is true, as stated, that in these places orange trees are planted in the open ground, these tourists neglect to inform their readers (what I learned from enquiry on the spot last summer) that these trees are regularly defended in winter by temporary sheds of wood or straw, or both; and, in extremely severe weather, have even artificial heat, as the intelligent gardener of the Isola Bella assured me. The fact is, that, as far as I know, there is no district in the north of Italy where the sweet orange trees can be left unprotected in the open ground in winter except in the neighbourhood of Pisa, Massa, Genoa, and some few other favoured spots on the east coast of the Mediterranean, which enjoy at once the advantages of greater proximity to the sea, and being protected from the north and east winds by the neighbouring range of Apennines. Even at Pisa, if the fruit be expected to be thoroughly ripe, it is necessary to train the trees against walls; and prudent gardeners there guard them against the frost either by wide projecting copings of straw (which, from experience, they seem to have found a sufficient defence from the effect of terrestrial radiation, without any covering in front), or by coverings of mats hung before them. These precautions, however, are not absolutely necessary; for an Italian gentleman in Pisa informed me that in forty years he had rarely known his unprotected trees receive material injury. Indeed, the thermometer seldom falls at Pisa more than two or three degrees below freezing; a cold which the sweet orange can bear without injury, as well as very strong hoar frosts, which we have had this spring for several nights in succession, without discolouring the leaves, or causing the ripe oranges to fall off.

At Florence, however, and generally throughout the north of Italy, where the local advantages of Pisa and Genoa do not exist, the sweet orange trees are never exposed to the frost, but are either planted in large pots, and removed under cover in winter, or, if planted in the open ground, as in the Borromean Isles, or on the shores of the Lago di Garda, they are protected as above stated. Even with every advantage of wall training, the quality of the oranges grown in the north of Italy is, I am inclined to believe, rarely very excellent. I cannot speak from experience as to those grown near Genoa; though, judging from the much finer apricots which I saw there in June last, than at Pisa, I should suppose that the oranges also are superior to those produced at the latter place, where they usually require sugar, even when quite ripe, to correct their acidity: a defect, however, which is in some degree compensated by their beauty at the dessert, just as plucked from the trees in all their freshness, the golden hue of each being set off by the contrast of a bunch of the green leaves still attached to it. The finest oranges sold in the north of Italy come from Sicily by way of Leghorn and Genoa.

I am ignorant whether there is anything peculiar in the mode of pruning the sweet orange trees, adopted by the Italian gardeners; but two points in their treatment of those kept in pots may be worth specifying: first, they rarely employ tubs, but prefer any large pots of handsome forms, and adorned on the outside with mouldings and bas reliefs of festoons of fruits, &c., which, though merely of common red earthenware, have a much better appearance than the painted wooden receptacles usually adopted in other countries; and, second, they seldom train their trees with a tall single stem, or clip them with the shears into a mop-like globular head, as is too often the practice, but suffer the stem to branch out immediately above the top of the pot, and prune it with the knife into the irregular and far more beautiful form of a natural shrub.

Much of what has been observed above, as to the cultivation of the sweet orange in the north of Italy, is also applicable to that of the lemon, which is equally tender; and, at Pisa and Genoa, is, in like manner, mostly trained against walls, which are never applied to the training of peaches or other fruits. Even the far-famed Leaning Tower and Campo Santo of Pisa would scarcely prove so attractive to an English gardener, as the display now made by a garden adjoining the city walls, which may be seen, to the extent of some thousands of square feet, thickly clothed with lemon trees trained to the height of 15 ft. and 20 ft., and studded with the greatest profusion of fine ripe lemons intermixed with blossoms and the young fruit for another crop, and without the slightest protection from frost. A considerable quantity of lemons are grown in the open ground on the shores of the Lago di *Garda* (but constantly protected in winter like the sweet orange trees, as above stated), and sent thence by land into Poland, Hungary, &c.

I am, Sir, &c.

Pisa, Jan. 25. 1831. W. SPENCE.

P. S. — I add to the parcel sent you some of the seeds of *Pinus Pinea*, in case any of your friends should wish themselves to raise this noble tree, which, with its towering stem of 100 to 200 ft. high, and flat table-like head, is often so distinguishing a feature of Italian scenery, immediately from seeds of undoubted vigour and freshness, having been only a short time detached from the cones. These large empty cones, from their great inflammability, and being easily set on a blaze by a candle, are constantly and most conveniently used in lighting the wood fires in this part of Italy, and in causing them to burn more briskly. The seeds themselves, after being detached from the stony outer shell, are daily sold in large quantities all the winter in Florence, Pisa, and other places within reach of the extensive forests of this pine, under the name of *Pinocchi*, and are little inferior to the common nut, and about the same size, only much more oblong; and not very dissimilar in taste, except that they have a very slight and agreeable resinous flavour.

ART. XIX. *Notice of the Culture of Thirteen Kinds of superior Horticultural Productions in the Neighbourhood of New York.* By Mr. THOMAS HOGG, F.H.S., Nurseryman there.

Sir,

MY neighbour Mr. Wilson has, in a former Number of your Magazine (Vol. V. p. 409.), enumerated certain garden products which are brought to perfection in the open air in America, but which require protection in England. With your permission I will state to you the cultivation and the result of these thirteen kinds of horticultural products in this country.

The European sorts of the *Grape* grown here for wine or table use have not succeeded in any part of this country in the open fields, arranged as vineyards, though the experiment has frequently been made by French, Swiss, and German settlers. The mildew has baffled all their efforts. This disease affects not only the young wood, but also the fruit, and totally destroys both for the season. In cities, however, the vine succeeds much better, not being much affected by the mildew; and I am informed that farther to the north of us, for instance, at Albany and Boston, they succeed better than they do here; that is to say, they occasionally produce fine crops of grapes. Protection, however, in winter is necessary every where; for such is the severity of that season here, that, if kept exposed, the vines are frequently killed down to the ground. Our mode of protection is to bury the wood under the soil. From the above statement of facts, you will perceive that artificial aid is more necessary to bring the grape to perfection in America than in England.

The Peach in general does well in the middle States; but is often killed by cold in the eastern States, and to the north of us. We cultivate the trees as standards. Their roots are much infested by a grub called the worm, which, if not carefully looked after and destroyed, will very soon destroy the trees; it is therefore with a great deal of care and expense that we at all succeed, nor is it uncommon to have all our expectations of a crop blasted by our late spring frosts. This season they have been unusually abundant and cheap.

Nectarines are almost a hopeless crop with us; the skin being smooth, it is attacked by some kind of insect, by which it is destroyed before it comes to maturity. In some of the small gardens in town we occasionally have a few fine nectarines, but they are always considered a fruit of great rarity.

Cucumbers. To have them in the early part of the season requires as much artificial aid as it does in England. The short prickly kind is the sort generally cultivated here, and they succeed best in light sandy soils. We sow them in May in the open ground; and about the latter end of July, and in August, we have great abundance cheap, if the season is favourable: for it sometimes happens here, as in England, that some seasons are more favourable for them than others. In England the plants or vines continue to bear fruit for a much greater length of time than what they do here; the plants likewise, when young, are very much infested by some insect, which often destroys them.

Melons. To have them early requires the aid of hot-beds, in the same way as for raising them. The seasons here are frequently unfavourable for them. When planted in the open ground they are frequently killed by heavy rains, particularly after dry weather: they do best in hot dry seasons and on sandy soils. In favourable seasons they are very abundant and cheap. If the old-fashioned mode in England of raising cucumbers in ridges were adopted for melons here, it would, I think, well pay for the trouble.

Pumpkins, Vegetable Marrow, and *Squash* are generally raised in this country for family use, and for feeding cattle in winter, in lieu of turnips: they are cultivated, as in England, without artificial heat.

Indian Corn succeeds well here, and is grown in lieu of field peas and horse-beans. Mr. Cobbett, I understand, asserts it is far superior. To that gentleman I refer Mr. Wilson for information respecting its cultivation in England without artificial aid.

Lima Beans [*D*ólichos sp.?] do well here. For an autumn crop we plant them out in the open ground, about the second week in May. A little artificial heat would be a benefit to them: they are frequently killed, if planted out too soon, by wet or cold weather. They are used in the same way as Windsor beans; some say they are better, but some say nay.

Pepper, or *Capsicum*, and *Tomato*, or *Love Apple*, are generally raised in hot-beds (by our best gardeners), and then planted out in the open ground as in England.

Okra (*H*ibíscus esculéntus) is mostly used here, by the French, in soups. It is sown about the middle of May in the open ground, and frequently raised early in the season in hotbeds, in the same way as the preceding.

Having thus gone through Mr. Wilson's select list of what he considers superior garden products, you will judge for yourself as to the correctness of his statements. To me it appears that he has been very unfortunate in his selection; for the greater part of them are cultivated here precisely in the same way as they are in England.

Much more might be said on the garden products and climate of this country, if my time would permit. I cannot, however, refrain from making a few observations respecting the cauliflower, broccoli, and gooseberry.

The *Cauliflower* is seldom attempted to be cultivated here by our market-gardeners: the extra-trouble and the precariousness of our seasons prevent them; for, if the hot weather sets in early, they never come to perfection. In private families, however (upon a small scale), by very great attention and care, a crop is usually obtained; but in our markets they are always a rare vegetable.

Of *Broccoli*, the only kind raised here is the Cape. We cultivate it precisely in the same way as you do in England, and it succeeds well; but the other kinds will not stand our winters without shelter; no, not even the Scotch kail.

Gooseberries, like the grape, are subject to mildew. They are seldom sold in our markets in a ripe state: if left on the bushes to ripen, they are generally burnt or scalded by the sun, and afterwards drop off.

The point of dispute between Mr. Wilson and myself is simply this: he has asserted that this climate is superior to England for the production of fruits and garden products; and, as a proof of this assertion, he has given us a list of thirteen kinds of fruits and vegetables said by him to require artificial aid in England, but not so in this country. The question, therefore, to be decided is, whether the success of these thirteen kinds of vegetables in this country is a sufficient proof of its superiority of climate. The next point of dispute is, whether Mr. Wilson is correct in stating that all these thirteen kinds require artificial aid in England, but do not require such in this country.

I differ from you in opinion, when you assert that "more may be done in the open air in America, in the cultivation of culinary fruits and vegetables, than in England; and as much by protection, by forcing, and by artificial climates." My opinion is, that more culinary fruits and vegetables are brought to perfection in the open air of England than here, and that less can be done here by forcing and by artificial climates than in that country. What are the culinary fruits and vegetables that grow in this part of America that do not grow in England? I remain, Sir, &c.

New York, Nov. 16. 1829. THOMAS HOGG.

ART. XX. *On the injurious Effects of Ants on early forced Peach Trees, with the Means adopted by which they were extirpated, and the Crop of Peaches saved.* By Mr. JOSEPH THOMPSON, Jun., Welbeck Gardens, Nottinghamshire.

Sir,

IN more than forty years' practice of my father, this is the first instance in which he has known ants to injure the bloom of peach trees. I beg to offer you a statement of the case, in hopes that it may be useful, and become a satisfactory answer to the various queries made on the subject of ants from the first to the sixth volume of your Magazine.

The earliest peach-house was shut up, and small fires applied on alternate evenings, after the 25th November; the tree roots in the outside border had been excited for some days previous. The fires were increased, and humid air applied, after the 6th of December. On the 10th some few ants were observed traversing the trellis in quest of their natural food produced by the aphis.* But as great attention had been paid to washing every shoot with a hard brush and cold water when the trees were pruned and tied, no aphis eggs nor aphis capsules remained on them.* This probably caused the ants to injure the peach blossoms, which was not discovered until the opening of the petals of two or three of the very earliest blooms, when the filaments, anthers, and pistillum were observed to fall out of the corolla. On closer examination, we found that many of the earliest blossoms had the unexpanded petals perforated, the filaments eaten out, and the ants lodged in the nectaries feeding upon the honey. This was on the evening of the 13th of December, and we immediately commenced killing them by hand, dislodging them from the blossoms with slender wires; this was continued by candlelight until most of the ants then on the trees were destroyed. We were going to apply the ant-trap of Mr. Boyce (Vol. V. p. 730.); but it was suggested that recently cooked bones of roast or boiled meat or fish were used for ant-traps on the Continent; and we adopted them with good success. They prevented any more ants from ascending the trees, until the colony discovered itself under the fire-flue at its entrance into the peach-house. They were immediately supplied with the preparation as below, and two days after not one ant remained, nor have any appeared since; but it is necessary to watch the spot for some weeks after a similar destruction, lest any eggs should produce a new colony: —

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* The wonderful ordinances of nature relative to the association of Formicæ and A'phides are related by Kirby and Spence in their *Introduction to Entomology*, vol. ii. p. 88.

Take thin slices of wheaten bread (say ½ oz. weight), dry it slowly, but well, that it may easily pulverise in a mortar; take ¾ oz. of fine loaf sugar, pulverise it also; add to the two former ingredients ½ oz. of oxide of arsenic, commonly called levigated mercury; triturate the whole well in the mortar, then put it into a clean dry glass bottle: of course the bottle should be labelled with the word "Poison." Very small portions of this poison may be applied on fragments of glass or the flat side of an oyster shell. The smell of recent oyster shells is also an excellent decoy for ants. Small bell glasses, such as are used to strike cuttings under, or small garden flower-pots, may be put over the deposit of poison, to prevent moisture from rendering it pasty, as well as to hinder any domestic animals from taking it. If small portions are laid down at intervals of four or six hours it will not become glutinous, in which case the ants cannot separate it. If bell glasses are used to cover the poison, any curious spectator may see the avidity with which the ants carry off the poison to feed their young. This preparation is equally efficacious for crickets.

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* In Samouelle's *Compendium of British Insects*, at p. 62., it is stated that the A'phides have the natural power to procreate, and that viviparously, to the ninth generation, *without* sexual intercourse.

Gentlemen and gardeners should be aware that this mercurial poison is equally fatal to vegetable as animal life. Should it be laid on the surface of the soil, round the stem of an orange tree or other plant, it will corrode the bark and alburnum, to the certain destruction of the plant. This I know from experience.

Yours, &c.

Welbeck, Feb. 1831. J. THOMPSON, Jun.

ART. XXI. *On the Amelioration of Fruit Trees.* By J. L., of York, Pennsylvania.

Sir,

M. POITEAU, in a paper on the amelioration of fruits, read before the Société d'Horticulture de Paris, refers to this country as "the grand laboratory of nature to produce new ameliorated fruits." "The colonists," says M. Poiteau, "brought with them some of the ameliorated fruits of Europe; but, as they were occupied with the more important cares incident to their situation, these fruits were not propagated by grafting, but only by seed; in consequence, they found themselves in time possessed only of sour crabs, unfit for the table. In the mean time, a second generation of fruit took place, which were little superior to those of the first. After a third, a fourth, and a fifth generation had succeeded the first, the inhabitants began to perceive some fruits better than those of the preceding generations." He refers for these facts to a tradition communicated to him in Virginia, in 1800. (Vol. II. p. 62.) If I correctly comprehend the theory attempted to be established, it is this: that the seedling of any variety of ameliorated fruit will only produce the sour crab from which it originated; that a second generation will exhibit appearances of improvement; that the third generation will be superior to the second; and that in this manner the improvement will progress, until a fruit is obtained superior to that upon which the experiment commenced. This theory has been occasionally adverted to by the correspondents of the Gardener's Magazine; one of whom, if I mistake not, has stated that, of the seeds in a particular apple, those which are round in shape will invariably produce ameliorated fruit, while that from the others will be but the original crab. (Vol. I. p. 223.)

This is a very interesting subject, and one of no little importance; it is, therefore, much to be wished that it had been in the power of M. Poiteau to have furnished us with some other evidence in support of his theory than the Virginian tradition. There is nothing in the history of this country to justify the conclusions which he has drawn. Some of our native fruits have been sent to Europe. I will call your attention to two of these varieties: the Spitzemberg apple of New York, and the Baldwin of Massachusetts; both, in all probability, seedlings of the first generation from the ameliorated fruits of Europe. Can it be said of these apples that they are "sour crabs, unfit for the table?" Of the countless thousands of seedling apple trees now bearing fruit in the United States, it is likely that many of a later generation may be found, producing fruit of equal goodness, though I doubt if there is any much superior. More varieties of good fruit have certainly been originated from later generations; but, I apprehend, not because any progressive tendency to improvement exists in the seedling, but because the "laboratory of nature" has been extended. For every seedling tree bearing fruit in 1600, there were in 1700 one hundred; and in 1800 at least one thousand. In something like this proportion have the better fruits been originated. The ameliorated fruits brought from Europe, on the settlement of the country, were but little propagated by budding and grafting, as the people were not skilled in those arts. Many years elapsed before nurseries were established, even in the Atlantic country. In 1800, three fourths of all the trees bearing fruit in the United States were seedlings. Nurseries have been subsequently established in all parts of the country, and none but the best of grafted fruit is now planted; which, in the interior, can be had in any quantity, at eight or ten dollars per hundred trees. Formerly but little attention was in general paid to fruit. Every farm had its orchard of six or ten acres; and, as you know, our farms are small (say they average 100 acres), the consequence of the equal distribution of property under our intestate laws. In an orchard of this size, of seedling trees, there will always be two or three trees producing sufficient fruit of medium goodness to supply the table of the owner; and, as there was no demand at market for the residue, it would only go to feed the hogs. Under these circumstances, it would scarcely be considered worth while to send some hundred miles to the Atlantic country for grafted trees. The nurseries in the interior are small establishments, and propagate such varieties as are most esteemed in their immediate neighbourhoods. Perhaps in Pennsylvania the Rambo (which is in the Chiswick garden, I believe) has been latterly more extensively planted than any other variety, though I do not know that it has much more than fashion to recommend it.

Each section of country has its own varieties of fruit; and in the state of Ohio, containing 1,000,000 of inhabitants, I doubt if there are a dozen trees growing of the two varieties of fruit before referred to, the Spitzemberg and Baldwin. As to the improvement of fruit, Nature, in this her "grand laboratory," has done much; but might not art in Europe do more? By the intermixture of the pollen, your friend, Mr. Sweet, can at pleasure vary the shade of a lily or the fragrancy of a rhododendron. Were such unequalled skill directed to the improvement of fruit, the happiest consequences must necessarily result.

After all, Sir, is it not to the intermixture of the pollen that variation in fruit is to be attributed? Take a fruit tree of medium excellence; average the opinions of the *Pomological* and *Gardener's Magazine*, and call the Hawthornden of Scotland such. Plant it beyond the reach of foreign pollen, and, I apprehend, its seedling offspring will not greatly vary from the parent standard; some of the seedlings will produce better and some worse fruit. If those seedlings are planted so that their pollen intermix, the second generation will exhibit signs of further departure in improvement and deterioration; and this variation will be greater as the soil, climate, and culture are varied: so that, in many generations, if the pollen be not permitted to mix, and the climate and culture remain the same, the departure from the parent standard of goodness will be trifling; but, on the contrary, if the pollen be indiscriminately mixed, and the climate and culture varied, the departure will be great. In the orchards of "natural fruit," as they are called in the United States, a collection of apples could in a few months be obtained quite equal to that of the 1200 in your Horticultural Society's garden. *Cui bono?* The varieties are already too numerous. As to apples and peaches, America excels Europe: as to other fruit, Europe excels America.

We are making some attempts at the culture of the vine. In this country there are about 200 acres planted with vines, after the manner of the French and Germans, 3 ft. by 4 ft. principally of the native species; which, although not to be compared with the *Vìtis vinífera* of Europe, perhaps deserve a more fávourable notice than you were pleased to take of them in the *Encyclopædia of Plants.* There may be some hundred individuals in our country who have small vineyards. In a year or two their petitions will be on the tables of Congress, calling for an increase of the duty on foreign wines. This is all the extreme of folly. Here the cultivation of the vine, for wine, should not be thought of for a century to come.

As to our tariff laws, the paper which you hold in your hand is of American manufacture; it costs 5 dollars per ream, and there is no duty upon its manufacture. Here, within 40 miles of the Atlantic waters, and within ten of a navigable river, Zèa *Màys* (Indian corn) may be bought in any quantity at 30 cents per bushel. Sixteen bushels and two thirds of corn will only buy a ream of coarse paper! O that the tariff and corn laws were with the errors which gave them existence! Here public opinion is fast gaining upon the *protection policy*, as it is called, and the tariff must ere long give way. Is it so with regard to the corn laws in England? I have a set of your works, the perusal of which has afforded me much pleasure. I trust the liberal opinions you have frequently advanced upon these subjects are held by many in your country. I hope we will live to see the day when England and America will act in accordance with their real interests.

Yours, &c.

York, Pennsylvania, May 1. 1830. J. L.

Art. XXII. *On the Diseases of Fruit Trees in America.*

By Jesse Buel, Esq.

Sir,

Our fruit trees are subject to some diseases, which do not seem to trouble the European gardener and orchardist. I shall notice a few of them, in the hope that you, or some of your correspondents, may aid us in discovering the cause and cure.

The plum and morello cherry trees are disfigured and destroyed by a species of gangrene. The limbs of these trees, and the trunks, when small, swell, crack, and exhibit irregular tumours, of a spongy appearance, which are first green, but change to a black colour. The branch soon dies; the sap seems to become vitiated, and, if the diseased parts are not amputated, the entire tree generally fails in one or two seasons. An insect, in its larva state, is generally found in the recent tumours, which Professor Peck has denominated the Rhynchæ̀nus cérasi; the same, he thinks, which occasions the fall of peaches, apricots, and plums (a formidable evil here), by the larva eating into the kernel of those fruits long ere they have attained their growth; or another species of the same genus. The first conclusion is probably not correct; for the fruit, in many localities, is destroyed, where the trees have continued healthy. The only efficient remedy that I am advised of, is to cut off and burn the affected parts. All of our stone and many of our seed fruits are grievously injured by insects, which prey upon them in the early stage of their growth, and cause them to drop. Although we can identify the enemy, we are without the means of repelling his attacks.

We have lost many of our pear trees by what is here termed the blight. The disease is generally first discovered upon the smaller branches, often at a distance from their extremities, by the leaves and bark, at a particular point, becoming black and dead. The foliage and wood above appear fresh and green for some days. At other times, the bark upon the trunk, or at the junction of the main branches, becomes dead in irregular blotches, contracts, and ultimately separates from the wood. In three instances, this season, I have found a circle of bark upon the trunk wholly dead, while all above appeared healthy and vigorous. The seat of the disease seems to be in the cambium, or elaborated sap, which becomes a medium for its extension. The progress of the disease is rapid, in proportion to the vigour of growth in the tree; rich soils and wet seasons being most prejudicial. The evil is confined to no soil or situation, though it is less prevalent in stiff grounds and grass lands. The apple and quince appear to be generally though less seriously affected. Some pretend to trace the evil to an insect, the Scólytus pýri; yet my observations have tended rather to multiply than to dissipate the doubts which I have had as to the cause of the malady.

The gooseberry and the grape, particularly the foreign varieties of the latter, are very liable to be destroyed by mildew, when partially grown; and three fifths of these crops are thus usually lost.

A subscription is circulating among us to raise 2000 dollars, to be awarded as a premium for the discovery of a preventive of the depredations of insects upon our stone fruit. Any thing you can offer, therefore, upon the subject of the preceding remarks, will be particularly interesting to your American readers, of whom there are many, and the number is likely to increase as we advance in horticultural improvement. Your publications are much sought after, and highly valued. The Society of this place, of which I am president, subscribes to your Magazine. We have in this state six horticultural societies. The subjects of education and rural improvement are the popular topics of the day. We have a respectable Lyceum in this city, which has published a volume of *Trans-*

actions, consisting of original papers in relation to the natural sciences. The volume will be sent to you if you desire it. I was disappointed in not finding a descriptive catalogue of fruits in your *Encyclopædia of Plants.* I think you promised one. Cannot you send me such a catalogue?

In a former letter I took the liberty of requesting your good offices in establishing a correspondence with some respectable nurseryman of your country; and I believe I have occasionally sent you some cuttings of fruit, and pamphlets that I thought would be interesting. I have made like communications to the Horticultural Society. I have not yet had the satisfaction of learning, from you or from Mr. Sabine, whether my cuttings or my requests have ever reached their designed destination. We have probably the best location for a nursery in the Union, and the demands upon it exceed our means of supply. We are anxious to give it a character equal to its advantages of location, and to enrich it with all the finer fruits of Europe. It is the importance of obtaining a correspondent on whom we can rely, that induces me to renew my importunities for your aid in this matter. Mr. Saul of Lancaster has encouraged us to hope that we shall receive some grafts from you, through him, in the spring. Such a favour would be particularly acceptable. We have commissioned Mr. Gordon, a correspondent of your Magazine, who proposes to visit New York, to bring us several articles, particularly for the green-house; and, as he will probably see you, you may commit to his charge any communication you may have to make. Command me freely whenever I can render you service.

I am, Sir, &c.

Albany, Dec. 20. 1830. JESSE BUEL.

WE shall be glad to receive the volume alluded to. We did not, to the best of our recollection, promise a Catalogue of Fruits in our *Encyclopædia of Plants;* in our *Hórtus Británnicus* we did, and had it in part prepared, but found it would render the work too expensive. A better European catalogue of fruits than has ever yet appeared will be published in the course of the ensuing spring or summer, by the Horticultural Society of London. It will contain short descriptions and synonymes; and scions of all the sorts may be obtained by any nurseryman, either in Europe or in America, on application, free of expense, to the Horticultural Society.

With respect to the cuttings of fruit trees, and the pamphlets, mentioned by our much-esteemed correspondent, we do not recollect to have received any of the former, and but one quarto pamphlet, containing a printed letter addressed to us, which we shall answer through the same source. As some of our correspondents in America seem to think that we are in the nursery business, we think it right to inform them that this is not the case, and that therefore we are not the fittest persons either to send grafts to, or to receive them from. We recommend Mr. Charlwood, of Covent Garden Market, for this purpose, in preference to all others; he having been in America, and being in constant correspondence with Messrs. Thorburn of New York. Most willingly should we undertake to collect and send off cuttings to our American friends, did our time permit, or were our means adequate to the maintenance of a sufficient number of assistants to effect this, and various other objects connected with America, in which we take a deep interest: but our case cannot be bettered in this respect; though some future editor of the Gardener's Magazine may be differently circumstanced. To be able to live at all, in this country, is too engrossing a business, to allow of much else occupying the time than the means by which we get our daily bread.

We can only promise one thing, and that is, regularity in answering correspondents, either in our Magazines or by private letters. A portion of the above communication of Judge Buel may probably have been intended more as private than public, but we have thought it better to answer it in this way, in order to make certain of its meeting the eyes of our correspondent. — *Cond.*

Art. XXIII. *On protecting the Blossoms of Fruit Trees, on Walls, from Frost.* By Mr. David Cameron, A.L.S., late of Bury Hill, now of the Birmingham Garden.

Sir,

The method of protecting fruit trees when in blossom upon the walls, which I some time ago promised to send you, is very simple as well as effectual, and has been practised in this garden for a number of years.

We take either young birch trees or strong birch copse which are of the same height as the walls, the fuller of small spray shoots the better. The branches are trimmed off from that side of them designed to be next the wall, against which they are placed upright. One man holds them there, whilst another spreads out the branches thin, and fastens them to it with a few nails and shreds. This operation is continued along the wall till the whole is covered: any small vacancies remaining uncovered are also filled up by nailing in a few of the small branches formerly cut off. Three pieces of rope yarn are then run along the wall, one of them near the bottom, another along the middle, and one near the top. The rope yarn is fastened by nails, at every 5 ft. or 6 ft., to keep the birch in its place and close to the wall. When all is finished, the small spray projects about 1 ft. from the wall, affording sufficient protection to the blossom against frost during the night, and also a partial shade from the scorching sun during those clear and hot days in March and April which frequently succeed cold and frosty nights at that season, and which even do more injury during the day to peach and nectarine trees upon south walls, in low situations, than the frost does during the night. The birch also prevents a current of air from passing along the surface of the wall; whereas, if canvass or other close covering be used, however closely it may be fitted to the wall at the two extremities, it always has a current of air passing between it and the wall. The birch is put up before the blossoms open, and is not removed before the latter end of May or beginning of June, according to the state of the weather at that time. When once the birch is got ready, the walls are covered as soon as they could be with netting, and the birch is removed in much less time than netting could be taken down. Where birch cannot be procured, hazel would be a tolerable substitute for it.

I am, Sir, yours, &c.

Bury Hill Garden, Feb. 13. 1831. DAVID CAMERON.

ART. XXIV. *On planting Fruit Trees on poor Soils and in exposed Situations.* By Mr. ROBERT HIVER.

Sir,

IN these times of distress, it becomes the proprietor of every piece of land to make the most of it; and it is the duty of those possessed of knowledge or experience in farming or gardening, to show to others how it may be cultivated to the best advantage. Under this consideration, I have been induced to send you some observations relating to situations very suitable for orchards, which have been hitherto considered the most inimical for the purpose. I fear that it is difficult to write any thing for the Magazine that will give satisfaction, and many may reject what I am now going to recommend; but let it be remembered that a single truth is worth five thousand arguments or opinions, and those who cannot be satisfied with reasoning may sometimes be convinced by facts.

All the authors that I have read, who have written on orchards, have recommended deep soils on sheltered places; but much experience has convinced me that bleak and barren sites, in many instances, will be found equally good, if not better. Some of the most old, healthy, and fruitful apple trees I ever saw grew in an exposed quarry; where, when they first planted the trees, it is difficult to conceive how they could cover the roots. I have also resided many years in the vicinity of an exceedingly fruitful orchard, situated on a sterile sandy bank facing the north-east, the soil of which was so shallow and poor that common vegetables could scarcely live upon it; yet the crops of fruit were uniformly fine. I could mention various others, but this may suffice to show that much good may result from planting such places. Many of the isolated cottages of the poor stand upon the sides of glens, where considerable portions of ground lie by them covered with nothing but weeds and brambles, which might be advantageously employed as fruit gardens. There are many steep surfaces, old quarries, and rocky places, no matter how bleakly exposed, that cannot be otherwise cultivated, which would, I am confident, make eligible situations for orchards. Trees so circumstanced come into bearing much earlier, live long, and seldom moss or canker. They cannot possibly generate too much sap; whilst robust trees in rich deep soils are like over-fed human beings, whose impure blood covers their skin with scabs and ulcers. It has been proverbially said of old trees, when they grow weak, they bear themselves to death; and that they will bring fruit, in defiance of the weather, when strong healthy trees in the same seasons will be quite barren. This arises, in my opinion, from better ripened wood, and, consequently, better farina and parts of fructification; and not, as frequently supposed, from the actual debility of the tree.

I have long been satisfied that the blossoms and young fruit of apple and pear trees suffer more from the larva of the *P*halæ`næ than from wet or frosty weather. These trees, in well sheltered places, are generally found much infested by caterpillars; whilst, in bleak and exposed orchards, they are comparatively free from them. Apple trees are often greatly injured by the nut bushes and thorn hedges that are planted to shelter them, because they entice *P*halæ`næ. I remember some years ago, when passing round the Vauxhall forcing-garden with the late Mr. Andrews, the fruit of several pear trees which had been well loaded had all fallen off: this he attributed to bad weather. I offered to convince him that it was not the case; and cut a few fruit open, each of which contained a maggot. Mr. Andrews felt offended at this, and said that gardeners called there only to ridicule his things, though they knew nothing in the country whence they came, but to drink tea and ale in the servants' hall, and crack jokes with ladies' maids and coachmen.

These few observations I consider to be of some importance to horticulture, whatever opposition they may meet with from your readers. It may, however, be objected that they are not applicable to Scotland or the northern parts of the kingdom; but this I know, that as fine apples are grown in the cold counties and outskirts of Scotland as are to be met with in any part of England.

I am, Sir, yours, &c.

Dec. 21. 1830. R. HIVER.

ART. XXV. *On the Cultivation of the Fig.* By Mr. W. PEARSON.

Sir,

I HAVE observed some notices about fig trees in your Magazine, but very little about their culture or management. Allow me, therefore, to send you a few remarks on the production of that most salubrious fruit, the fig. I have now had the management of fig trees at this place for upwards of fourteen years, and will venture to say that there are none finer in Scotland. Indeed, I am warranted in saying so by the Secretary of the Caledonian Horticultural Society, who has seen the fruit gain the Society's silver medal twice in the course of four years. The trees are situated against a common wall, with a south-east aspect, the length of wall which the three oldest trees cover is 76 ft. by 14½ ft. high, with a cope which projects 15 in.; and is set at an angle of 45°, or nearly. The border consists of a deep black rich loam, rather light. The kinds are, the brown and black Ischia; the former I consider the best fig, for it ripens much more easily, grows much larger, and is better flavoured than the black. I have known many of them to weigh from 6 to 7½ ounces each. I have seldom known these trees to come short of a good crop, except this year, which I impute to the severe frosts in April and May, and the cold wet summer throughout, which caused the most of the fruit to fall from the trees; however, those that remained of the brown Ischia have swelled and ripened well.

Now, Sir, the following is my mode of managing fig trees. About the middle of November I prune and nail them, being careful to cut away all those shoots which have reached the top of the wall, on purpose to give those place that are in their rear; by this means I keep up a supply of young wood through the whole tree, from bottom to top, laying in the branches thin and regular, because, if too thick, they will do no good. Having finished the pruning and nailing, I proceed to the forests, and there procure a quantity of spruce fir branches, and with them I cover the trees all over, one branch thick; those branches afford sufficient protection to the young shoots all winter, and in the spring their foliage begins to drop off by degrees, so that the trees get naturalised to the season by a process much nicer than the hand of man could effect by any other means. By the 10th of May every leaf has dropped from the fir branches, just when the fig begins to put forth her leaves. I then remove the skeleton branches, and give the trees a complete washing with water, by means of the garden engine, to clear them of all the decayed leaves of the fir which lodge about the trees and crevices of the wall. Silver fir will not do, because they retain their foliage much longer than the spruce. In July I proceed to the summer pruning and nailing; I then cut away all those shoots which I consider will not be wanted to furnish the tree at the winter nailing, the remaining young wood I nail close to the wall, and expose as much as possible the fruit to the sun. Now, in regard to the watering of figs, which I consider the most essential part (for it is my firm opinion that they cannot be brought to perfection without a plentiful supply of water at the root), I once heard a nobleman say that he always thought the fig tree to be partly aquatic. I was more confirmed in this opinion after perusing a treatise on figs written in the south of France in the sixteenth century (if I recollect right), the author of which says, "We place small cisterns under the fig trees, and into them we put the ends of a quantity of worsted threads, and then conduct them through among the branches, bringing the other ends down to the ground, a little lower than those in the cistern; and by this means the capillary attraction is set to work, diffusing moisture among the branches, and also dropping down upon the roots." The author concludes his remarks by stating that fig trees should never be put into the hands of a sluggish gardener. The above process was exemplified in the fig trees at this place; for, until these last two years, the wall which they occupy was the back wall of a stable, now cleared away, the roof of which always rained on the trees when the clouds rained on it.

Consider the quantity of water that fell on these trees in the course of a year, and also consider the fine fruit which they produced. Now the case is quite altered; for, in place of being exposed, as formerly, to plenty of water, they are completely shut out from it by the cope which I have already described. This cope was recommended by Sir Alexander Hope, to whom we are much indebted for many valuable discoveries in horticulture. I did not much like it at first, but am now convinced that it is of use during the ripening season; namely, August, September, and October; and it only adds to my labour during the spring and summer months, in attending to them with water, which ought to be as soft as possible; soapy water, from the washing-house, being preferable. I said above that we had lost our crop this season, owing to cold and wet, I should only have said cold, for we have not had too much wet for fig trees if we had had heat along with it. The age of the fig trees in question is not known, but I am told by some old residents that they were large trees in 1746.

I am, Sir, &c.

Ormiston Hall, Oct. 22. 1830. WILLIAM PEARSON.

ART. XXVI. *On the Culture of the Pear, with Remarks on Mr. Hiver's Practice.* By Mr. B. SAUNDERS, Nurseryman, Jersey.

Sir,

I HOPE that Mr. Hiver does not consider the observations I made on his article on pears, in Vol. VI. p. 53., as emanating from a spirit of criticism, or a wish to condemn his system: on the contrary, my object was to obtain further information on a subject in which I take much interest, and with which he appears to be so thoroughly conversant.

Residing, as I do, on an island celebrated for its production of fine fruit, particularly of the pear kind; where every cultivator, to a certain extent, prides himself in rivalling his neighbours in his productions; and where, from our contiguity and constant communication with France and other parts of the Continent, we have frequent opportunities of obtaining new sorts; I have, within the last twelve years, been enabled to prove the qualities of a vast variety, as well as to study their peculiar habits and modes of cultivation.

To be minute in the detail of the relative merits of each sort would create matter too voluminous for insertion here; and, at the present moment, would be a task that would infringe too much on my professional occupations. According, however, to promise, I subjoin a list of such sorts as I deem worthy in every respect of cultivation; classing them as summer, autumn, and winter fruits.

With regard to Mr. Hiver's practice, I wish to state that I differ from him in his mode of shortening the breast wood in the summer to two or three eyes, which occasions fresh shoots, and impoverishes the tree to no purpose. A better plan is, either to displace them entirely when young, or, as I have sometimes practised on very luxuriant trees where there was a deficiency of fruit spurs, to break, in the month of July, the foreright shoots nearly through to within five or six eyes of the bottom, leaving the upper extremity suspended six or eight weeks. This impedes the communication of the two saps, and prevents a second shoot; the eyes at the base most frequently forming themselves into fruit-bearing spurs for the following season.

Your worthy correspondent seems also to condemn the winter pruning of pears. His practice is undoubtedly good as far as it regards trees trained against walls or espaliers, but will not do for trees trained *en quenouille* or *en pyramide*. These require an annual winter pruning from top to bottom; every shoot must be shortened according to its strength, not only to keep the tree in its proper shape, but also to induce a supply of fruit-spurs near the body, which protects the fruit from being blown off or otherwise injured by the autumnal winds, and prolongs the life of the tree in a healthy fruitful state, many years.

Of the different sorts of stocks, I have found the Portugal quince answer remarkably well for most of our free-growing kinds of pears: in particular, if the soil be deep and good, and the bottom not too dry, they shoot freely, and in a short time after planting produce abundance of superior-flavoured fruit. Even weaker-growing sorts are valuable on these stocks; as, where the garden is limited, and variety required, a double or even triple quantity may be planted, a great object to some cultivators. There are, however, several sorts which do not unite well on this stock, but this may be overcome by double grafting; for this purpose, the Beurré, Doyenné, Virgoleuse, and Swan's egg, are recommended; but free stocks are much preferable where the soil is high and dry.

I remain, Sir, yours, &c.

BERNARD SAUNDERS.

Nursery, Jersey, Nov. 1. 1830.

LIST OF PEARS.

Summer.

Green Chisel.
Madeleine, or Citron des Carmes.
Juneating.
*Cuisse Madame.
Jargonelle.
Epargne.
Windsor.
Bergamotte, summer.
*Franc-Réal.
E′pine d'été.
E′pine rose.
Orange tulipée.
Ah! mon Dieu.
Belle de Bruxelles.
Caillot rosat d'été.
Citron panaché.
Mansuette.

Autumn.

Beurré d'Amaulis.
*Beurré de Capiaumont.
Beurré Romaine.
*Beurré doré.
*Beurré rouge.
Bezi de Montigny.
Mouille bouche.
Lèche-friande.
Louise bonne.
*Gracioli.
*Duchesse d'Angoulême.
Bon Chrétien musqué.
*Gansell's Bergamotte.
Messire Jean.
Gloux morceaux.
Franchipane.
Verte longue.
Seville.
Sucré vert.
Bezi d'Echasserie.
*Doyenné blanc.
*Doyenné gris.
Culotte de Suisse.
Autumn Bergamotte.
Swiss Bergamotte.
*Crassane.
*Marie Louise.
Swan's egg.
Martin Sec.
Bishop's thumb.
*Petit rousselet.

Winter.

*Chaumontel.
*Bon Chrétien d'Auch.
*Beurré d'Astrasie.
*Beurré d'Aremberg.
*Beurré d'hiver.
*Colmar.
*Passe-Colmar.
*Colmar doré.
E′pine d'hiver.
*Royale d'hiver.
*St. Germain.
*Passe St. Germain.
Angélique de Bourdeaux.
Bergamotte de Soulers.
*Bergamotte de la Pentecôte.
Bezi de Caissoy.

Baking Pears.

*Bon Chrétien d'hiver.
*Bon Chrétien Turc.
Bon Chrétien d'Espagne.
Trésor d'hiver.
Gilogil.
*Belle de Jersey.
Poire de livre.

Those marked with an asterisk must have a wall; the others will do well against trellis, or trained in quenouille and pyramidal shapes. — *B. S.*

ART. XXVII. *On providing a Succession of the best-flavoured Gooseberries.* By B., Coventry.

Sir,

I HAPPEN to be possessed of so vulgar a taste as to think a good gooseberry, eaten fresh from the tree, and in perfection, one of the very best and most grateful fruits that can be produced in this country. It is, moreover, an abundant and a wholesome fruit, so that it may be indulged in freely without stint, and without fear of any ill consequences. Being, like your correspondent, Mr. Vallance (Vol. VI. p. 727.), a great admirer of the gooseberry, I entirely concur with him in the sensible plan which he is anxious to adopt, of cultivating different kinds, "that will come in succession from a very early to a very late period," in order that the fruit may be enjoyed for the longest possible period. Indeed, it had repeatedly occurred to me, previously to my seeing his communication, that although the best sorts are (as it seems to me) few in number, and may be reduced to a very short list, still, any variety which ripens its fruit either very early or very late, is, if on that account only, a desirable acquisition, and worthy of cultivation, in as much as it prolongs the time in which the fruit is in season.

Much confusion and uncertainty seem to prevail about the names of gooseberries; many different sorts often passing under the same names, and again one and the same sort under different names. I am by no means certain that I know the names of any correctly. There are two kinds which, in my estimation, are preferable to all others for dessert, and with which alone I am satisfied so long as they remain in season. The two are known to me by the names of the champagne (or rumbullion *) and the green gage. Being doubtful, however, of the correctness of these names, and uncertain whether the sorts may not frequently pass by some other, I will endeavour to describe the fruits themselves. The first, the champagne, bears a moderate-sized berry, of an oblong shape, and exceedingly high flavour, hairy, dark red, almost black when dead ripe, at which time it is often suffused with a bloom like that of a plum. This, which is a very common sort, is, to my taste, by far the best gooseberry I am acquainted with; it is also an exceedingly good fruit for culinary purposes, and has the merit, too, of being a very great bearer. The bush will grow to a large size, with strong upright shoots, invariably more or less perpendicular like those of an osier. The fruit of the second sort (the green gage) is rather small, round, hairy, of a dull green colour, exceedingly sweet and luscious, and partakes of the flavour of the plum from which it derives its name. This is by no means so great a bearer as the champagne; and the berries, though covered with a very firm skin, are unfortunately particularly liable to crack with rain. The bush is low, with shoots having a tendency to arch towards the ground. Neither of the above sorts are remarkable for being early or late, both ripening their fruit

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* Query Rambouillet ?

about the usual gooseberry season. I will mention a third sort, which, though not to be compared with either of the above described in point of flavour and intrinsic merit, is yet valuable and well worthy of cultivation, from the circumstance of its coming into season the latest of any I happen to be acquainted with. I never heard any name assigned to it; but it may perhaps be known to cultivators by the following brief description: the berry is of a moderate size, larger than the champagne (and quite as large as any gooseberry need be *), rather oblong, smooth, and assuming a bright red colour as early almost as any begin to turn, but not ripening nor attaining its full flavour till late in the season, when it becomes of a very dark red, approaching to black; the skin is firm and tough; and whether it be owing to this circumstance, or to its ripening later than most others, it is generally the last gooseberry that is attacked by the wasps, and even when full ripe will often remain almost untouched by those pests after all others have been devoured. The bush, which is a great bearer, forms arching shoots.

Should your correspondent Mr. Vallance be desirous of cultivating either of the above gooseberries, which, I must add, are neither new nor (I believe) uncommon, I shall be happy to supply you with cuttings for his use. I have heard much in praise of the Warrington; but what I have received

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* I shall, perhaps, incur the disapprobation of the *Fancy*, and such as frequent gooseberry feasts, when I make the remark, that the large prize gooseberries (crown bobs, roaring lions, top sawyers, &c. &c.) are for the most part very inferior to the smaller ones, for the table at least, if not for preserving also, and are calculated rather to gratify the eye than the palate. In this opinion I am not singular; for many of those who cultivate the large sorts are yet ready to acknowledge the superiority of the smaller ones. I once knew an old nailer in Staffordshire, a great florist, who appropriated a considerable portion of his garden to the cultivation of gooseberries, by which he made a surprising sum of money in the year, — more, indeed, than he liked to acknowledge, — selling the fruit by the pennyworth to people who came to the garden for the purpose of eating it. Observing that almost all his trees were of the large-berried kinds, I asked him why he grew such large sorts, for that they were not half so good to eat as the small ones. "You are right, Sir," he replied; "I know it: but then these big ones give less trouble in gathering; they fill the measure soonest, and they do well enough for the *sawnies*." Of course I had nothing further to urge against my friend's practice, as his gooseberries, like Peter Pindar's razors, were intended purposely for sale. I would, however, strongly recommend that Virgil's advice as to the size of a farm should also be adopted (*mutatis mutandis*) in the choice of gooseberries, at least when they are cultivated for private use.

"Laudato ingentia rura,
Exiguum colito."

"Praise thou large farms; a small one choose to till."
Trapp's Translation.

under that name is in every respect so inferior a fruit, that I can hardly believe it to be the true one. There is also another kind, which, from its being a late ripener, is worth notice; the berry, in point of shape, colour, and hairiness, may be said to be a gigantic modification of the champagne, but is far inferior to it in flavour, and scarcely of so deep a red; it is, however, a useful gooseberry, and a good bearer. The shoots are not straight and upright, like those of its prototype, the champagne, but are more inclined to the arching form. I may add, that there are some smooth white gooseberries, of a very sweet and luscious flavour, which ought to find a place even in a limited collection. Yours, &c.

Coventry, Dec. 20. 1830. B.

Among white gooseberries, no gardener should be without Woodward's Whitesmith, which, although neither smooth nor small, is of excellent flavour, and bears abundantly; it will, moreover, hang long on the bush. — *J. D. for Cond.*

Art. XXVIII. *On the Hop, its Blight and Remedy.* By John Murray, Esq. F.S.A. F.L.S. &c.

Sir,

To insure the hop, which may be termed the vine of England, from insect spoliation, must be allowed to be a question fraught with much commercial importance. The leaf and flower are affected with honey-dew, as it is called, and this occurs under peculiar circumstances, and is a phenomenon standing in some relation to specific changes in the atmosphere. It is unnecessary here to enquire whether it be a secretion of aphides, as Mr. Curtis supposes; or a morbid secretion of the plant itself, as the late President of the Linnean Society contended for; or if there are varieties independent of each other in their sources of production. The saccharine exudation on the leaves of the O'rnus rotundifòlia (the Calabrian manna ash), &c., may well be adduced to favour the opinion that it might be a secretion of the plant. Now such a secretion would become a powerful point of insect attraction, as are the nectaries of flowers; and it is also certain that aphides are found in numerous cases where honey-dew abounds, though it would be difficult to decide which is the cause and which the consequence. In a vigorous-growing plant, insect spoliation will be found a rare occurrence. Generally speaking, it is not the imago but the larva that does the mischief. Thus Linnæus inferred that the flowers of the

Hùmulus Lùpulus, or Hop, were rendered unproductive from the attacks of the ghost moth on the roots of the plant. The imago, whether *P*apílio or *P*halæ`na, or other winged insect, as the bee, &c., may rifle the blossom of its sweets, but in return it acquits itself well by becoming the medium of a transfer of the pollen. When the hop is struck by the fly, as it is called by hop-growers, it will be found, on accurate investigation, to be consecutive on some morbid change in the hop-bine itself; an effect produced by some previous vicissitude in the atmosphere.

Perhaps, therefore, the truth will be found to be this:—the plant is blighted, as it is termed, by the wind, or some destructive vicissitude in the atmosphere, and the transudation of the saccharine matter is the consequence of a morbid change thus superinduced. This saccharine secretion becomes the lure to the imago of the insect; here its ova are deposited: these, again, in process of time, become larvæ, that, like the Egyptian locust, devour every green thing. In this view of it the principal thing to be attended to is the prevention of this morbid change by controlling and modifying the condition of the atmosphere, in all probability the proximate or immediate cause.

I do not mean to say that winged insects may not occasionally riot on the bloom; as the leaf-cutting bee and others. The A`phis ròsæ, too, by clinging round the neck of the young rosebud, seems "to drink its marrow up;" and yet, fenced as the moss rose, loveliest of flowers, is, with its peculiar resino-caoutchouc investment, it is difficult to conceive that these attacks of the aphides can reach its core; and the question is, whether such buds, independently of the aphis altogether, would not prematurely fall, just as it happens with many others unconnected with insect attack. The truth is, such plants and such buds are sickly; and the appearance of insects, though not exactly contemporaneous with the incipient stage of the disease, promptly follows.

The fact that plants grow most luxuriantly near a lightning conductor, and are there maintained in a healthier condition than elsewhere, proves that the maintenance of the electric current between the earth and the heavens becomes an accessary in its luxuriance. Viewing the honey-dew on the leafage of the hop-bine as the presage of decay and index of disease, and that this disease has been occasioned by some withering blight consequent on a meteorological change in the atmosphere, because a mere flux of air, in its pneumatic relations, which is simply mechanical, could produce no such morbid change; and as this morbific meteorological feature in the atmosphere might certainly be modified or controlled by conducting wires attached to the hop-poles, in the form of paragrêles; it follows that copper wires, so attached, would, in all probability, ward off those causes which determine such devastations in hop plantations. The experiment is easy, and the expense trifling: if carried into practice, the contrast would, if I am not much deceived, decide in favour of their universal adoption; and, should this appear in your next Number, it will be in good time for the hop-growers. Let it not be forgotten that a plant luxuriating in health is seldom or never the prey of insect tribes; but, when sickly, it soon becomes the victim of many enemies. This is clearly perceived in every realm of zoology, as well as in the tenants of the vegetable kingdom.

In the summer of 1827 I had evidence which may tend to confirm my views analogically. By the effect of an east wind a fine Siberian crab was very singularly blighted, exhibiting precisely the appearance of its having been the victim of a flash of lightning; the leaves, presenting the semblance as of their having been poisoned, became black and decayed; and the young twigs withered away. No mere mechanical rush of wind, I should presume, could have produced such an effect.

February 6. 1829. Yours, &c. JOHN MURRAY.

ART. XXIX. *Thoughts on Mr. Drewery's "New System of Farming."* In a Letter to a Gentleman who had desired him to peruse Mr. Drewery's Book. By J. H.

Sir,

ACCORDING to your desire, I have perused Mr. Drewery's *New System of Farming*, with all the attention and all the patience which I am master of, and cannot help pronouncing it altogether the greatest hoax I ever read. The author is not only palpably ignorant as an author, but deficient in truth, common sense, and common experience. He is also very presumptuous in claiming the invention of boiling pig meat, which is nothing more than a second edition of the "kail brose of Auld Scotland;" and that meal would counteract the poisonous effects of his boiled rubbish, though it may be found in Holy Writ that Elijah healed a pot of deadly pottage by strewing a handful of meal in it. Common sense informs us that every sort of cookery is only for the purpose of assisting digestion: old horses require old beans to be either ground, or softened by boiling; but to boil *green* food for them is both heterodoxical and paradoxical. The pig is a semi-carnivorous animal; its stomach is calculated to digest almost *every kind of food*. For this reason, store pigs require no cookery; but when a pig is feeding, his quantity of food must be diminished, and its quality increased: thus, a gallon of old beans per day will make a pig increase in weight and quality, for the last fortnight of his life, more than a bushel of pig meat did while in a growing or store state. But it is needless to insist. The brute beasts will inform us that a green or boiled thistle is both poisonous and unpalatable: whereas a withered thistle is both palatable and nutritious. With respect to Mr. Drewery's medicines, they are truly laughable: he may, indeed, be called the Urine Doctor. Urine feeds his horses, fattens his cattle, cures all disorders in his sheep and pigs, &c.: urine makes his cows give plenty of milk, and also dries his cows of their milk; cures the bots in horses, the tail-evil in cows, as well as warbles in their backs, &c. O dear! I must not "answer a fool according to his folly, lest I be like unto him." Mr. Drewery's system of farming is at least fifty years behind the modern improved Scotch system. He is wofully in the dark respecting the cultivation of land; but this I could excuse, if he had not talked of cutting winter vetches two or even three times in a summer, and saving a crop of seed at last. This beats every thing.

In order that I may not forget every thing I read, I have written a critique on the following passages of the work: —

Public meetings, honorary rewards, and letters addressed (p. 18.); address to the public, and introduction to the work (p. 31.); increase of food, by boiling green or dry food (p. 61.); cutting the ears and tails of pigs, shower-bath, and urine (p. 66. 69.); oatmeal mixed with horse-corn, excellent food (*granted*) (p. 74.); sods and twitch, good fuel for boiling weeds (p. 80.); cuts vetches nearly a yard high three times in one summer, and saves a crop for seed in the autumn (p. 93.); calves reared on half the price of their mother's milk (p. 97.); urine and straw better than hay and water for horses (p. 103.); boiled grass better than green for horses, &c. (p. 104.); certain horses refuse corn and hay unless sprinkled with urine (p. 125.); a young beast gets fat by a man's urine and straw (p. 125.); a severe flogging cures a horse bound in the bowels (p. 128.); urine cures the gripes, prevents the bots in horses (p. 132.); urine cures greasy heels in horses, and red water in cows (p. 134.); urine cures the tail, and dries the milk of cows (p. 134.); urine cures warbles in cows, removes the effects of poison (p. 137.); a waggoner's whip cures bloated cows, &c. &c. &c. (p. 138.)

My name was never yet in print; and I hope it never may be, if I cannot write a better book than Mr. Drewery's.

I remain, Sir, &c.

Nov. 3. 1830. J. H.

PART II.

REVIEWS.

ART. I. *Memoirs of the Caledonian Horticultural Society.* Vol. IV. Part II.

(*Continued from* p. 199.)

41. *On the Cultivation of Onions; on preparing Ground for Carrots; and on destroying the Gooseberry Caterpillar.* By Mr. John Wallace, Gardener, Ballechin. Read March 8. 1815.

ONIONS. — The soil of the garden at Ballechin was light, and the ground destined for onions was always dug twice a year, viz. in autumn and spring; giving a good coating of dung in September, and a light one in March, immediately before sowing. The crop of onions was poor, and much infested with the maggot, and got worse and worse every year. To try the effect of a change of system, the ground was only hoed and raked in autumn, and dug half-spade deep, applying well rotted cow dung in spring before sowing the seed. The crop was excellent, and entirely free from the maggot. The reason assigned for this favourable result deserves attention, as a principle in the management of light soils: —

"I find light and dry soils are rather hurt than benefited by too much labour and pulverising the ground; and I was led at first to adopt this method, from observing that such of the tenants in my neighbourhood as gave repeated ploughings to their bere lands had seldom but a very poor crop after it."

Carrots. — The ground is trenched, only a few days before sowing, to the depth of 18 or 20 in.; after this the surface is levelled, a coat of rotten cow dung pointed in, and the seed sown. The carrots are large, and free from maggot. Before the ground was trenched they were small and maggoty.

Gooseberry Caterpillar. — Watering with lime water, always when the sun shone strongly, effectually destroyed them, without injuring the leaves.

Art. II. *Catalogue of Works on Gardening, Agriculture, Botany, Rural Architecture, &c., published since December,* 1830, *with some Account of those considered the most interesting.*

In enumerating the contents of the Botanical Periodicals, those genera or species marked by a star (*) are not included in the first edition of the *Hórtus Británnicus.*

Curtis's Botanical Magazine, or Flower-Garden displayed. New Series. Edited by Dr. Hooker. In 8vo Numbers, monthly. 3*s.* 6*d.* coloured; 3*s.* plain.

No. LI. for March, contains

3053. Hòv*ea* pannòsa (*Cun. MSS.*), Pannose Hovea. "A very elegant and ornamental species, its blossoms being of a beautiful purple, the upper side of the leaves glossy green, and the under side and the branches thickly covered with a ferruginous tomentum. It approaches H. lineàris, but that species has much narrower leaves, and smaller and pale-coloured flowers. Native of New South Wales." — 3054. Tupístra nùtans *Wal.*, Nodding Tupistra. A very interesting plant, of which Ròhde*a* japónica (Oróntium japónicum till lately) of the gardens gives some idea. — 3055. Nothochlæ̀na *ténera. "A graceful little fern, which, in point of genus, seems intermediate between Nothochlæ̀na and Cheilánthes. From all the known species of Nothochlæ̀na [Dr. Hooker spells this word Nothoclæ̀na] it is distinguished by its tender, glaucous, and quite glabrous fronds." — 3056. *Lu*pìnus *Cruikshánks*ii.* "This truly magnificent species of lupine was discovered by Mr. Cruikshanks, growing upon the Andes of Peru in great plenty, not far from Pasco, and near the verge of perpetual snow. Our fine plant was raised from seed at the Glasgow botanic garden, and planted in the open border early in the summer of 1830, when it was soon covered with a profusion of richly coloured blossoms, which attracted the attention of all who saw it. Although not exceeding 4 to 5 ft. in height, it is rather arborescent than shrubby. Corollas large; very handsome; bluish purple, variegated with yellow, white, and red. Mr. Murray would not risk it out through the winter, but removed it to the green-house. It is very impatient of moisture, and does not strike readily from cuttings. No seeds were produced upon our plant." — 3057. *Loàsa* *híspida. This is the same as the *L.* *a*mbrosiæfòlia of Jussieu, and of Lindley in the *Botanical Register;* and, although treated as a green-house annual at the Edinburgh botanic garden, it may with care be cultivated out of doors. — 3058. Delìma sarmentòsa, Sarmentose Delima. An evergreen stove shrub, with panicles of small white flowers; its rigid and scabrous leaves are used by the Cingalese for polishing. — 3059. Monodòra (from *monos*, one, and *dōron*, a gift, in allusion to its solitary fruits) Myrística, *Jamaica Calabash Nutmeg.* Long says, the seeds are impregnated with an aromatic oil, resembling that of the Eastern nutmeg, from which they differ so little in flavour and quality, that they may be used for similar purposes in food or medicine. This author consequently recommends the plant for general cultivation in the West Indies.

No. LII. for April, contains

3060. Bánks*ia* littoràlis ? The cone of flowers very beautiful. Came into blossom in the green-house immediately after B. speciòsa, "and continued also in blossom at the same time with it: the two species form a good contrast in their colours and manner of flowering." Professor Graham, who contributed the article on the above plant, doubts its identity with B. littoràlis of Brown, but asserts it quite the same with the B. littoràlis of Lindley in the *Botanical Register;* if so, it is, as our friend Mr Sweet informs us, the B. Cunninghàm*ii* of Brown. From the same authority we learn that the B. undulàta of Lindley in the *Bot. Reg.* is only the B. serràta of Linn. in Brown's *Pródromus*, and that the B. marcéscens of

Hooker in _Bot. Mag._ 2803. is the B. austràlis of Brown's _Pródromus._ — 3061. Hunnemània fúmariæfòlia. The much-esteemed Eschschóltzia califórnica bears great resemblance to this plant; "especially in the foliage, the general structure of the flower, and in the siliquiform or pod-shaped capsule. It differs, however, in its erect stem and branches, in its yellow petals wanting the band or broad spot of orange towards their base, in its peltate four-lobed stigma, in its two-leaved calyx, in the small receptacle for the parts of the flower, and in its sessile seeds." — 3062. Vernònia *acutifòlia. Produced its pale purple blossoms in the stove in December; a season when far less showy flowers are very acceptable. Its nearest relative is doubtless the V. serícea β purpuráscens, figured in the _Botanical Register_, 522; but that has its leaves broad and silky on both sides; our plant has them narrow, and nearly glabrous. — 3063. Dryándra nervòsa. A plant of considerable beauty, and of much variety of colouring. — 3064. Portulàca *Gillièsii. The bright red purple flowers of this plant are beautiful; almost as much so as those of _P._ grandiflòra. The seeds of both species were sent from the plains of Mendoza by Dr. Gillies. Like all other succulent plants from the same country, both species should be kept dry, especially in winter. In _P._ Gillièsii the short, dotted, very obtuse leaves, the upright and appressed axillary tuft of hairs, together with the large size of the blossoms, afford abundant characters for distinguishing it. — 3065. Indigófera atropurpùrea. "The shrub grows very large, and when in full blossom is highly ornamental, on account of its numerous long spikes of dark purple flowers. It is common in the forests of Nepal." — 3066. Pládera decussàta. An inconspicuous plant.

Edwards's Botanical Register. New Series. Edited by John Lindley, F.R.S. L.S. &c., Professor of Botany in the London University. In 8vo Numbers, monthly. 4_s._ coloured.

No. I. of Vol. IV. for March, contains

1392. *Ledocárpum (meaning not given, but from _karpos_, fruit, and, very probably, _ledos_, a ragged garment, as the capsule is covered with the calyx and involucre) *pedunculàre; Oxalídeis affìne. A plant of extreme rarity and elegance, with large, showy, saucer-shaped blossoms. "It was collected by the late Mr. M'Rae for the Horticultural Society, during his residence in Chile, in 1825. Two plants only were raised from his seeds, one of which flowered at Chiswick last August. In a favourable summer it would succeed very well out of doors; but it will, at all times, be necessary to keep it from frost in a green-house, or very good pit, during winter; and it would be better, perhaps, to consider it altogether as a conservatory plant. It increases by cuttings, but is apt to damp off; if kept in health it is very handsome." This species appears distinct in its alternate leaves, and other points, from L. chiloénse of _De Cand. Prod._ i. 702., making two known species of this interesting family. Dr. Hooker, not aware that this plant was known to botanists and had been described, in a number of his _Botanical Miscellany_, published since this number of the _Botanical Register_, gives an engraving and description of this beautiful plant by the name of Cruikshánksia cistifórmis, intending thereby to compliment his friend, and the friend of science, Mr. Cruikshanks. On seeing the plant published in the _Botanical Register_, Dr. Hooker has, however, very candidly, in an advertising note to his _Botanical Miscellany_, retracted his name of Cruikshánksia cistifórmis. — 1393. Guettárda speciòsa. A tender stove plant, whose white flowers diffuse a most delicious fragrance, both by night and day; it is cultivated in the gardens of India for the sake of its fragrance. It is a native of Madagascar as well as of India. — 1394. Perilòmia (_peri_, around and _lòma_, a margin; fruit with a membranous border) ocymoìdes; Labiàtæ. "This beautiful plant was discovered in Peru by Mr. Cruikshanks, who presented it to the Horticultural Society, in whose garden it flowered abundantly, in August and September last. It is a half-shrubby plant, thriving well out of doors in summer, but, as far as can at present be judged, requiring to be protected from frost in winter. It is difficult to represent by art the brilliancy of its scarlet blossoms. Hitherto it has only been increased by cuttings, but it is probable that in a warm summer it will produce seeds." — 1395. *H*ibíscus *Líndle*i*. This beautiful plant is a native of the Burma empire, and was introduced to England by Dr. Wallich. It proves to be a hardy stove plant, growing with much vigour, but not flowering readily, unless the young shoots are struck as cuttings as soon as the blossoms appear, in which case it flowers freely, and becomes an extremely ornamental plant, especially in the winter months, during the whole of which it flowers in abundance. It is too tender to flower out of doors, even in summer. — 1396. Habránthus *Bagnóld*i*. "This beautiful plant flowered in Mr. Tate's nursery, and was collected in Chile by Captain Bagnold, a gentleman who has introduced many valuable species of plants to the gardens of this country. Like all the large black bulbs that come from Chile, this, under the management usually applied to them, is a shy flowerer; and, if exposed to too high temperature, apt to dwindle gradually away. A south border, well protected from frost, by a frame placed over it, and a little heat introduced into it occasionally in very severe weather, is, we suspect, by far the best situation for bulbs from such countries as Chile." — 1397. *Justí*cia* cárnea. "This is one of the handsomest stove plants we are acquainted with, combining great beauty of foliage with very striking flowers, and a constant disposition to produce them." — 1398. Camél*lia* japónica var. *imbricàta. One of the finest varieties of Camel*lia* known.

No. II. of Vol. IV. for April, contains

1399. *A*ristolòchia trilobàta, Three-lobed Birthwort. A climber from the West Indies, where it inhabits damp forests, and is deemed an antidote to the bite of serpents. In England it is a stove plant of rapid growth, and produces an abundance of its singular flowers at various periods of the year; may be increased by layers or cuttings. "The lip of the flower of this plant is lengthened out into a narrow thong, which, in the specimen figured, exceeded 22 in. in length. The purpose for which this excessive elongation of the floral envelope is intended is not known; but it is worthy of remark, as tending to confirm the opinion that in nearly allied plants similar peculiarities of structure may be always expected. This singular elongation of the lip of the flower exists, accordingly, not only in several other species of *A*ristolòchia, but also in a species of *A*′sarum, discovered in North-west America by Mr. Douglas," and which Mr. Lindley has denominated *A*′sarum *caudàtum. — 1400. Raphiólepis rùbra. The plants of this genus are evergreen compact shrubs, with spikes of white flowers, and, therefore, somewhat ornamental. They are all from China, and will occasionally survive an English winter nailed to the south front of a wall, and covered. R. rùbra is published from Tate's nursery. — 1401. Blè*tia* flórida. From Trinidad. A species which Professor Lindley, after very careful comparison, believes quite identical with B. pállida of Loddiges's *Botanical Cabinet.* Like all the other species, a stove perennial. — 1402. Azàlea calendulàcea var. *lépida. A third garden variety of Azàlea raised at the Earl of Caernarvon's by Mr. Gowen. It appears almost intermediate between A. calendulàcea and A. nudiflòra, from which it originated, but partakes more of the character of the former than of the latter. "The clear delicate pink border of the pure white segments of the corolla, and the bright yellow blotch upon one of them, give this variety a peculiarly neat appearance, wherefore Mr. Gowen calls it A. lépida." — 1403. Tradescán*tia* undàta. A pretty annual species, much like T. erécta, but with its petals of a red lilac, not blue, colour. — 1404. *I*`ris *bícolor. "Mr. Campbell, the intelligent gardener to the Comte de Vandes, treats it as a half-hardy plant, and gives it a north aspect in the summer, as the midday sun is too powerful or its beautiful blossoms. It produces a tolerable succession of flowers for several months, and, it is hoped, will soon become common, as it increases readily by its creeping root-stocks. It would be a most lovely object if grown in a bed several feet long, where its gay colours could be seen in a mass, and where new flowers would be constantly succeeding the old ones." Mr. Sweet kindly informs us that this beautiful plant is by no means referable to the genus I'ris, but that it is a genuine and third species of Salisbury's genus Dìetes (*dis*, twice, *etēs*, an associate; related to I'ris and Moræ'*a*, its species having been referred to both). — 1405. Œnothèra *bìfrons. This very interesting garden variety was obtained in the Horticultural Society's garden, by Mr. James Ewing, between *Œ. r*òseo-álba and *Œ.* Lindley*àna.* To the fine full flower of the former it adds the deep crimson spots of the latter; and in mode of growth is, as it were, intermediate between the two: less bushy than *Œ. r*òseo-álba, more erect than *Œ.* Lindley*àna.* Poor gravelly soil best suits the annual œnotheras.

The British Flower-Garden. New Series. By Robert Sweet, F.L.S. &c. In 8vo Numbers, monthly. 3*s.*

No. XXII. for March, contains

85. *A*sclèpi*as* virgàta. A pretty white-flowering species from Mexico, hardy enough to live through our winters without covering, if planted in a warm sheltered south border. Succeeds well in heath mould, or in the usual soil of gardens if light and rich. It is of elegant growth, and flowers abundantly, and may be increased, by dividing at the root, or by seeds, which sometimes ripen. — 86. Lobèl*ia* decúrrens. A rare and interesting species, raised at Bury Hill from seeds received from Chile in 1829. "In the garden at Bury Hill it was planted by the side of a wall, in a southern aspect, in rich light soil, it grew freely, and flowered in the autumn, and was still in fine bloom at the beginning of last October. The milky juice of this species is particularly acrid, and renders caution in the handling of it proper. "Cuttings of it will doubtless root readily in a little heat, like the other species of this tribe; but it will be best to dry them a day or two before planting, to close the wound, otherwise they will be liable to rot or damp off." — 87. *Centrocárpha *D. Don* (*kentron*, a sharp bristle, and *karphos*, chaff; sharp bristles terminating the chaff) *grandiflòra *Sweet*, Great-flowered Centrocarpha. This, the Rudbéck*ia* nudicaúlis *Nut.*, but not of others, is a very ornamental herbaceous plant, and most desirable in every flower-garden. The genus Rudbéck*ia* includes discordant species, and Centrocárpha will receive several of them. — 88. Cummíng*ia* *trimaculàta. A lovely addition to our collections, and "will require precisely the same treatment as the other Chile and Mexican bulbs; that is, to be planted in a light sandy soil, and to be covered up in severe frost." Figured from the Chelsea botanic garden, the bulbs having been presented to Mr. Anderson by Miss Reinagle, who had received them from their native places of growth in the vicinity of Valparaiso, in Chile, where they were collected by Miss White (now Mrs. Miller), daughter of the British Vice-Consul at that place. With these bulbs several other curious plants were forwarded, and amongst them apparently a third species of Cummíng*ia;* which, however, has not yet blossomed. In a collection of dried plants lately received by Mr. Lambert, from Mr. Thomas Bridges, now resident at Valparaiso, there are fine specimens of the present species, C. trimaculàta, and also of another, which it is very probable will prove to be the same with that one from Miss Reinagle which has not yet blossomed, and which Mr. David Don proposes to name C. *tenélla."

No. XXIII. for April, contains

89. Ornithógalum corymbòsum, Corymb-*flowered* Star of Bethlehem. This is a fine species, with broad foliage, a clustered corymb of large white

blossoms, and with black germens and orange anthers. It was sent home from Chile by Mr. Thomas Bridges, collector and vender of natural history productions there, to the late Robert Barclay, Esq., in whose garden, at Bury Hill, it blossomed, in a southern aspect, through September and October last. Native specimens of this plant exhibit twenty flowers in a corymb. "With the greater part of the bulbs from Chile, Peru, Buenos Ayres, and Mexico, the present one will succeed well in a warm border in the flower garden, planted about 6 in. deep, with the covering of a mat in severe frosty weather, but to be always exposed when the weather is mild." *O.* corymbòsum may be increased by offsets from the root. — 90. Aquilègia sibírica, Siberian Columbine. With fine light blue blossoms. "It is a most beautiful plant, and its smooth carpella (seed-vessels), and the knob at the end of the spur, readily distinguish it from all the other species. The strength of the present specimen was most probably owing to the rich soil in which it had been planted. It is said to be a native of the woods in Dahuria, so that, in all probability, it will be fond of growing in the mould formed from decayed leaves, which should be mixed with some rich sandy loam: it appears to seed freely. — 91. *R*hododéndron *Russell*iànum.* A splendid hybrid, with gorgeous heads or bunches of bright rosy red, or almost crimson, blossoms. "This plant, and other varieties, was procured from seeds of *R.* catawbiénse, that had been fertilised with the pollen of *R.* arbòreum, the brilliant Nepal species. That *R.* Russell*iànum* is perfectly hardy there can be no doubt, Mr. Russell having had many of them out the two last winters; they require to be grown in peat soil, and will doubtless be rapid growers; we see no abortion whatever either in the ovarium, stigma, or stamens; so that, without doubt, it will produce perfect seeds." Blossoms in spring. Drawn from Russell's nursery, at Battersea. Mr. Russell has the merit of having produced several very ornamental hybrid plants, one of which, beside the plant above, is the well known Potentílla Russell*iàna.* — 92. *N*arcíssus Cýpri. The original single-flowered parent of the double and semidouble Cyprus narcissuses of the gardens. These latter have been generally supposed varieties of the Italian narcissus, but Mr. Haworth, in his published and accurate remarks on this tribe, had suggested differently, when Mr. Sweet accidentally met with a plant confirming Mr. Haworth's suggestions. *N.* Cýpri approximates on *N. Tazzétta* of *Flora Græca,* but is still distinct.

Botanical Cabinet. By Messrs. Loddiges. In 4to and 8vo Parts, monthly. Large paper, 5*s.*; small paper, and partially coloured, 2*s.* 6*d.*

Part CLXVII. for March, contains

1661. Habenària cristàta. "Cultivated it in a pot in loam and peat earth, with a portion of sawdust. It should be placed in a shady position in summer, and preserved during winter in a frame." — 1662. *E*rìca declinàta. "In growth very low and bushy, producing a profusion of flowers in the latter part of the summer and autumn. — 1663. *E*rìca curviflòra. — 1664. Zygopétalum Mackà*ii.* A very beautiful species, named by Dr. Hooker after Mr. J. T. Mackay of the Dublin botanic garden. The beautiful party-coloured blossoms are very durable. — 1665. *P*tèris *peruviàna. Received from M. Otto, of the Berlin botanic garden, which "is exceedingly rich in ferns, as well as in almost all other plants." — 1666. Alstrœmèr*ia* psittacìna. The soil, in which to cultivate this beautiful plant, should be heath mould, loam, and rotten dung, in equal proportion; the pots large. — 1667. Dichorizándra *pícta. The painted leaves and beautiful clear blue blossoms of this new plant make it very desirable. — 1668. Pimelèa *l*inifòlia. — 1669. Nerìn*e* undulàta. "Long known as Amarýllis; but, from the discovery of so many new forms of that voluminous tribe, the division has become in a great measure indispensable. — 1670. *M*álva *campanulöides. A very singular species, from, it is believed, the western parts of North America. "We have not increased it yet, but have had it in cultivation some years."

Part CLXVIII. for April, contains

1671. Mammillària díscolor. — 1672. *Técoma* capénsis. "It is a plant of free growth, and produces its rich and beautiful flowers in September and October. The protection of a green-house or conservatory is necessary for it in winter. The soil should be light loam, and it may be increased with facility by cuttings." This is indeed an ornamental plant, its spikes of tubular orange blossoms being exhilarating objects at the times mentioned, and even to the close of December, when the rarity of flowers makes them doubly welcome. It is moreover a very hardy green-house plant, surviving our winters even in a pit. — 1673. *Pòthos* microphýlla. — 1674. Nerìn*e* hùmilis. A pretty species. — 1675. Aneìmia *collìna. — 1676. *Pachypòdium tuberòsum, the *E*chìtes tuberòsa of *Hort. Brit.* An interesting plant with a large tuberous root-stock, prickly dwarf stems, few leaves, and tubular blossoms, externally red, internally whitish. The blossoms are usually produced in the latter months of summer. Native of sandy barren plains of the Cape of Good Hope; in England it "must be preserved in a warm green-house, with little water, and should be potted in sandy loam." — 1677. Habrânthus *Andersòn*ii*. The flowers of this species are yellow streaked with red, pretty large, and produced both in April and September. — 1678. *E*rìca aggregàta. A pleasing species; its branchlets terminated by clusters of elegant little rose-coloured blossoms. It is of middling growth, and flowers from July to the end of the year, and sometimes longer. — 1679. *E*rìca *c*erinthöides. The kind figured "is a particularly fine variety of this favourite species." — 1680. Vernòn*ia* flexuòsa. "A pretty species, flowering in the autumn, requiring the protection of a green-house, and should be potted in light loam."

The Botanic Garden. By B. Maund, F.L.S. &c. In small 4to Numbers, monthly. Large paper 1*s*. 6*d*.; small paper, 1*s*.

No. LXXV. for March, contains

297. Georgì*na* supérflua, the blood-red anemone-flowered variety. To his remarks on this variety Mr. Maund subjoins a list of the anemone-flowered and of the globe-flowered georginas. — 298. Eschschóltz*ia* califórnica. "Though of perennial continuance, in the warmth of its native country, it must here, in the open garden, be cultivated as an annual." Particular directions are added for raising plants. To these remarks and directions we reply, the plant is strictly perennial in England, and to grow this gorgeous ornament to our gardens in perfection only two conditions are necessary. Sow the seeds as soon as ripe, or at latest before Michaelmas (for seeds of all the plants in the natural order *P*apaveràceæ suffer much from being kept out of the soil); and be mindful to sow them in dry, stony, or calcareous soil. Young plants will forthwith arise from those seeds, and outbrave the severity of winter without protection. We doubt not that this plant might be induced to bestow its beauteous trailing wreath-like branches over rock-work, as its root-stock is thick and fleshy, and extends deeply, resembling in all these characters its near ally *G*laúcium lùteum, the established ornament of the shingly beaches on various parts of our coast. — 299. Digitàlis mìnor. — 300. Linària Cymbalària.

No. LXXVI. for April, contains

301. Strong's Duke of York Carnation. The article under this is devoted to the elucidation of the florist's manual operations, and is illustrated by thirteen exquisitely neat engravings. — 302. Hypóxis erécta. Though its blossoms are not brilliant, "it should not be forgotten that with *flowers, as with* mankind, something will be discovered in the character of

almost every one which may claim our admiration, and out of which some portion of gratification may be collected to add to our general stock of happiness." H. erécta requires a little protection in winter. — 303. *I*ris pállida. " A tall handsome species, whose flowers possess a peculiar delicacy both of tint and texture." — 304. Potentílla Russell*iàna*. " For the production of perfect seeds of any species of plant, it is necessary that the farina, or powder-like substance, which is found in flowers, should be applied to the stigma or summit of its style. This is generally the natural consequence of their position and contiguity; but sometimes it is effected through the instrumentality of insects, or even the atmosphere. The anthers which contain such farina may, by the curious florist, be removed, previously to its dispersion, and the farina of some other species of the same genus may be applied instead of its own. In such case, if seeds are thereby perfected, they are found to produce hybrid plants, partaking of characters intermediate between the two which have been the objects of the experiment. By this means was P. Russell*iàna* originated between P. formòsa and P. atrosanguínea, by Mr. William Russell, nurseryman, of Battersea." The anthers, however, of this hybrid are usually destitute of farina, and it consequently produces no seeds, but it admits of increase by dividing at the root.

Chandler and Booth's Illustrations and Descriptions of the Camellieæ. In Imperial 4to Parts, every two months. 7*s.* plain; 10*s.* coloured; and 18*s.* extra-size.

Part VII. for February, contains

25. Camél*lia* japónica atrorùbens, *Loddiges's* dark red Japanese Camellia. A vigorously growing variety, imported from China, by Messrs. Loddiges, in 1809. It is always among the latest in coming into blossom, opening at about the same time as the waratah. The flowers are not very freely produced, but it is nevertheless a handsome and desirable variety, whose flowers are very neat and showy.

26. Camél*lia* japónica *élegans, *Chandler's* elegant Japanese Camellia. A variety raised from seed of the waratah, by Mr. Chandler, about eight years ago. It is free of growth, and the flowers are of a very delicate rose colour, and measure from 3½ to 4 in. in expansion, ranking in form, between those of the waratah and the pæony-flowered, but in other respects they are distinct from both.

27. Camél*lia* japónica Welbánk*ii*, Welbank's *white* Japanese Camellia. Very different from any other white-flowered kind; it is of robust habit, and remarkable for the convexity of its foliage. A very desirable variety, whose flowers are of a yellowish white, and from 3 to 3½ in. in diameter. These are delicate, and compared by Messrs. Loddiges to the flowers of the Gardèn*ia* flórida in form and texture. Introduced in 1820 by Captains Welbank and Rawes, and not by the late Mr. Basington, as stated in the *Botanical Register.*

28. Camél*lia* japónica flórida, Cluster-flowering Japanese Camellia. Produced in 1819 from seed of the waratah, fertilised with the pollen of the pæony-flowered. The flowers are produced in great abundance at the extremity of the branches, and open pretty early in the season. They are not large, but are very beautiful, being 3 in. in diameter, and of a deep rose colour, intermediate between the deep red of the waratah, and the bright rose of the pæony-flowered. The succeeding numbers of this fine work will in future be published once in three months.

The Florist's Guide and Cultivator's Directory, &c. By Robert Sweet, F.L.S. &c. In 8vo Numbers, monthly. 3*s.* coloured; 2*s.* plain.

No. XLV. for March, contains

177. Gloria Mundi Tulip. A handsome golden-coloured bizarre, whose *perianthium leaflets* (*petals* of old) are very much imbricate, broadly obovate, rounded at the ends, and shallowly notched, attenuated gradually

downwards, slightly edged with velvet, and more or less marked with very narrow lines of the same colour up the centre; the edges and lines feathered a little with very short lines. Drawn from Davey's collection, in whose priced catalogue for 1829 it is marked at 6*s.* — 178. Cupid Ranunculus. Petals obovate, a little hollow at the end, arranged in regular circles, straw-coloured, tipped with a rosy pink, feathered a little inwards. Raised by Mr. Waterston of Paisley. — 179. Strong's King Carnation. A scarlet bizarre; flowers very large and double; petals very broad, spreading, finely rounded at the ends; of a pure white, beautifully striped and variegated with bright scarlet and deep velvet intermixed; outer ones much the broadest, lying quite flat; inner ones much narrower, and slightly recurved at the edges. Raised by W. Strong, Esq., from seed of his Duke of York. — 180. Burnard's Emancipator Tulip. Flower cup-shaped, but spreading; perianthium leaflets (petals) broadly obovate, rounded at the points, attenuated towards the base, neatly imbricate, bent a little inwards at the margin, of a pale straw colour, yellower towards the points, striped and edged with broad stripes of a dark velvety purple, which stripes are much feathered at their sides. A very desirable bizarre, different from most others. Raised from seed in the collection of J. P. Burnard, Esq., Formosa Cottage, Holloway.

No. XLVI. for April, contains

181. Albion Tulip. A bizarre, with the flower large and somewhat spreading, but cup-shaped, of a bright yellow, edged and variegated with a brown purple. Drawn from the choice collection of J. Goldham, Esq., who grows it in the third row of his tulip bed. — 182. Thomson Ranunculus. Flowers very double and compact, consisting of several circles of white petals, edged with a rosy red. Raised by Mr. Waterston of Paisley. — 183. Gould's Duke of York Carnation. A scarlet bizarre, with its flowers large and double. Petals in several circles, very variable in size, rounded at the edges; white, marked with patches, stripes, and spots of scarlet, intermixed with stripes of a velvety purple. Mr. Hogg sells this variety at 7*s.* the pair. — 184. Hogg's King William Picotee. Flower very large and double, of a handsome form. Petals broad and rounded, arranged in several circles, slightly notched at the edges; white, edged with a bright red, and generally marked with a line or two of the same colour. Likely to become a great favourite amongst florists.

Table supplementary to the Hórtus Británnicus, containing such of the Plants noticed in the foregoing Periodicals, as are not included in the first edition of that work.

2947. ANEI'MIA.												
25656*a* collìna *Raddi*	hill	£	⊠	or	1	......	Br	Brazil	1829.	D	s.p	Bot. cab. 1675
1421. *A'*SARUM.												
12091 caudàtum *Lindl.*	tailed-*tipped*	£	△	cu	¾	...	...	N.W.Amer.	1826.	D	p.l	
521. AZA'LEA.												
calendulàcea												
9 lépida *Gowen*	pretty-*flowered*	■		or	4	my.jn	Va	hybrid	...	L	p.l	Bot. reg. 1402
2038. CAME'LL*IA*.												
japónica												
élegans *Booth*	elegant	■	⊔	spl	10	ja	Ro	seedling	...	I	l.p	Chan. ill. 26
imbricàta *Booth*	imbricated	■	⊔	spl	10	mr	C.R	China	1824.	I	l.p	Bot. reg. 1398
2412. CENTROCA'RPHA *D. Don.* (*Kentron*, a sharp bristle, *karphos*, chaff.)												*Comp. Heliántheæ.*
grandiflòra *Swt.*	great-flowered	£	△	or	3½	s	Y	N. Amer.	1830.	D	co	Sw. fl. gar.n.s.87
Rudbéck*ia* nudicaùlis *Nut.* not of others.												
3336. CUMMI'NG*IA*.												
trimaculàta *D. Don*	three-spotted	☿	△	el	¾	d	B	Chile	1829.	O	p.l	Sw. fl. gar.n.s.88
tenélla *D. Don*	delicate	☿	△	or	¾	...	...	Chile	1829.	O	p.l	
1004. DICHORIZA'NDRA.												
picta *Lo. C.*	painted-*leaved*	£	⊠	or	½	s.o	B	S. Amer	1830.	D	lt.l	Bot. cab. 1667
143. DI'ETES. *Sal.* (*Dis*, twice, *etes*, an associate; related to *I'*ris and Moræ'*a*.)												*Irideæ.*
bicolor *Sweet's MSS.*	two-coloured	£	△	or	2	jl.o	Y.D	......	..	D	l.p	Bot. reg. 1404
*I'*ris bicolor *Lindl.* in *Bot. reg.*												

975. HABRA'NTHUS.													
	Bagnóldi Herb.	Bagnold's	♉	⊔	or	1	n	Y	Chile	1829.	O	s.l	Bot. reg. 1396
	Andersònii Lo. C.	Anderson's	♉	⌊△⌋	or	¾	ap.s	Y.r	M.Video	1829.	O	s.l	Bot. cab. 1677
2014. *H*IBI'SCUS.													
	Líndlei Wal.	Lindley's	■	□	spl	3	d	P	India	1828.	C	l.p	Bot. reg. 1395
58. JUSTI'C*IA*.													
	cárnea *Lindl.*	flesh-coloured	■	□	spl	4	au.s	F	Rio Jan.	1827.	C	l.p	Bot. reg. 1397
1415. LEDOCA'RPUM *Desf.*	(*Karpos*, fruit, *ledos*, a ragged garment.) *Oxalideis affine.* 1.—2.												
	pedunculàre *Lindl.*	long-stalked	■	⊔	or	1	au	Y	Chile	1825.	C	s.l	Bot. reg. 1392
2193. *LOA'SA.*													
	híspida *L.*	hispid	✱	⌊○⌋	or	2	jl.au	Y	Lima	1830.	S	s.l	Bot. mag. 3057
	L. ambrosiæfòlia J. and *Lindl.* in *Bot. reg.* 1390												
2004. *MA*'LVA.													
	campanulöìdes *Lo. C.*	Campanula-lk	✱	△⌋	cu	½	o	Bh	N. Amer.	1825.	S	l.p	Bot. cab. 1670
933. *N*ARCI'SSUS.													
7555*a*	Cýpri *Haw.*	Cyprian	♉	△	or	1	mr.ap	W.y	Cyprus	...	O	co	Sw. fl. gar. n. s. 92
2910. NOTHOCHLÆ'NA.													
	ténera *Gill.*	tender-*textured*	£	[△]	or	½	...	Br	Mendoza	...	D	s.p	Bot. mag. 3055
1985. *L*UPI'NUS.													
	Cruikshánksii Hook.	Cruikshank's	■	⊔	spl	5	jl.au	Va	Peru	1829.	S	s.l	Bot. mag. 3056
1183. ŒNOTHE'RA.													
10015*a*	bífrons *Lindl.*	two-faced		○	or	1½	jn.n	P.c	hybrid	1830.	S	co	Bot. reg. 1405
1670. PERILO'MIA. *H. & K.*	(*Peri*, around, *loma*, margin; fruits with a membranous border.) *Labiatæ.*												
	ocymöìdes Kth.	Basil-like	■	⊔	or	3	au.s	S	Peru	1829.	C	s.l	Bot. reg. 1394
1447. *P*ORTULA'CA.													
	Gilliès*ii* Hook.	Gillies's	■	⌊△⌋	or	½	jn.jl	R.p	Mendoza	1827.	S	s.l	Bot. mag. 3064
2926. *P*TE'RIS.													
25512*a*	peruviàna *Otto*	Peruvian	£	[△]	or	1	o	Br	Peru	1830.	D	s.p	Bot. cab. 1665
1339. *R*HODODE'NDRON.													
11025*a*	Russelli*ànum* Swt.	Russell's	■		or	4	mr	Ro.R	hybrid	...	L	s.p	Sw. fl. gar. n. s. 91
2262. VERNO'N*IA*.													
20477*a*	acutifòlia *Hook.*	acute-leaved	■	⊔	or	4	d	Pa.P	S. Amer.	...	C	l.p	Bot. mag. 3062

British Botany. The Botany of Great Britain; including all the Plants growing wild, or such as have become apparently wild, in England, Wales, Scotland, Ireland, and the British European Islands. Published in Monthly Numbers, at 2*s.* 6*d.* each; and each Number to contain Eight faithful Representations of different Species, taken from the living Plants, truly and beautifully coloured from Nature, with Dissections of the most essential Parts of Fructification, where required. By H. Weddell, Botanical Engraver.

The descriptions, and all other useful or interesting information, will be given by R. Sweet, F.L.S., author of numerous botanical and horticultural publications.

We shall, if possible, notice the first Number of this work in our next.

Talboys, D. A., a Bookseller and Stationer in Oxford: The Pursuit of Literature and Science compatible with Habits of Business. A Prize Essay, read before the Oxford Mechanics' Institution. Dec. 1830.

There is much in this pamphlet that we should wish to quote, and we could say a great deal in favour of the idea that every mechanic or labouring man might, if his natural capacity admitted, acquire as much knowledge as this talented author, and yet pursue his daily labours at the loom, the anvil, the bench, the spade, or the plough. All that is necessary is beginning in time, with proper infant schools. It is as natural to love knowledge as it is to love light; and it is knowledge, and knowledge alone, to which we must look for the emancipation of man from all the evils with which he is now affected.

PART III.

MISCELLANEOUS INTELLIGENCE.

ART. I. *Notes on some of the London Nurseries and Suburban Gardens.*

HENDERSON's Nursery, Pine-Apple Place, Edgeware Road.—Feb. 12. The number of hot-houses and pits in these grounds is yearly increasing, and they now cover several acres. In no nursery about London are houses and house-plants kept in better order and neatness, or the plants in a more thriving condition. All the young heaths, amounting to many thousands, are kept in frames, the pots standing on coal ashes; the sashes are entirely removed during mild days; but, during nights and severe weather, the sides of the frames are well protected by litter, and the roof by Russian or straw mats, with or without litter under them, as may be thought necessary. It is clear that, if the temperature can be kept a few degrees above the freezing point by retaining heat, rather than by supplying it by dung or fuel and letting it pass off through the glass in a continued stream (as it does in green-houses where the roof is uncovered), the plants will be kept at much less expense, and thrive a great deal better. The most difficult house to keep heaths in during the winter, that we have ever seen, is the heathery at Woburn, which has a floor elevated 15 ft. or 20 ft. above the surface of the ground, a span roof, and glass sides. The heaths are kept alive there, and generally look well; but, certainly, nothing like so well as those in the London nurseries, where they are kept in frames. The attention of the gardener at Woburn must be most unremitting; and it is astonishing that the frequent watering does not destroy the plants. A young man who has had the care of the Woburn heathery for a season has, indeed, gone through a species of moral training which will be of use to him as long as he lives.

The mice are very injurious to plants in flower in the frames at Henderson's nursery, by eating off the blossoms: to prevent their entrance, the frame is set upon, and surrounded by, a small lining of road-stuff (the scrapings of the highway). The gritty cutting nature of this material prevents the animals from working their holes through it; this operation in the mouse genus being principally performed by the mouth. A lining 6 in. below the surface of the ground outside the frame, and rising 3 in. above the bottom edge of the frame, is found effectual. Newly sown peas are protected from mice on the same principle, by sowing chopped furze along with them.

The show-house here is full of beauty; and it is gratifying to observe how many of the new acquisitions from North and South America have already become popular plants, which may be bought by everybody. Among these, Schizánthus may be mentioned as an admirable annual for early forcing.

In this nursery, and several others adjoining, there are plants of giant ivy, 20 ft. high, kept in pots; so that, by means of these, a house, a bower, or a wall, may be built, and covered with this admirable evergreen at once. By the help of the large trees and shrubs in many of the London nurseries, and the large American plants at Waterer's, near Woking, a garden and grounds of any extent may, in the course of any one planting season, be completely furnished, so as to have the appearance of having been planted twenty or thirty years. The wealthy have arrived at this degree of luxury in building and furnishing houses, but not yet in gardening; as they get poorer and more intellectual, they will love gorgeous architecture and cabinet-making less, and gardening and planting more.

Jenkins's Mary-le-bone * *Nursery.—Feb.* 13. Some improvements in the mode of heating the peach-houses by hot water have lately been made in the New Road branch of this nursery, by Messrs. W. and D. Bailey of Holborn. An accident which happened here induces us to caution gardeners who have their houses so heated against the danger of leaving the water in the pipes in the winter season, when no fire is applied. In one night many feet of pipe burst, and were rendered useless for any purpose but remelting, by the freezing of the water contained in them.

The circle in the Regent's Park, which now forms the principal scene of Mr. Jenkins's operations, is every year looking better from the increased growth of the trees destined to remain permanently. This circle would make an admirable public garden. We have suggested the idea of covering the whole of it with glass (*Mag. Nat. Hist.*, vol. i. p. 385.); but the time for such an extravaganza is gone by; as a hardy garden it might contain, in groups arranged according to the natural system, all the more hardy and easily cultivated of the trees, shrubs, and herbaceous plants, including grasses and ferns, which would endure the open air in Britain; and, if these were all conspicuously named on the ends of bricks, as in Loddiges's arboretum, it would form a scene of much rational recreation and useful instruction to the rising generation. By way of architectural and sculptural ornaments, government might let spots of a few feet square, here and there, to rich persons, on condition of their building handsome monuments, either for their own families or in commemoration of some of their ancestors. Some public-spirited individuals might erect statues to great men of different ages and countries. The garden should be open to every body during the whole day, every day in the year; and one or two of the police might perambulate it for the sake of protection and order. The government (that is, the commissioners of woods and forests), which owns the soil, might make an arrangement with the occupant to hold it for a number of years, on condition of gradually forming it into a botanic garden of the kind to which we allude, and of leaving it in that state. We have no doubt Mr. Jenkins would readily enter into the idea of such an arrangement, since he is having prepared, notwithstanding the deplorable depression of the times, above a thousand named bricks for a herbaceous ground, to be planted alphabetically along one of his borders. To those gardeners who prepare their own paint for painting names on bricks or other tallies, we may mention, that a good mixture for this purpose is composed of vegetable charcoal, which any gardener may burn for himself, ground to the finest powder, a little powdered resin, which may be procured from any chemist, or from a spruce fir tree, and raw linseed oil, boiled together till they are of the consistence of cream. If common lampblack is used, as that is generally more or less mixed with grease, it is good to dry or roast it in an iron vessel till the grease evaporates; but, by using vegetable charcoal, this is rendered unnecessary. The names are written with a camel-hair pencil, the use of which requires a little practice in order to produce handsome letters. The rate of payment for writing the generic and specific names only is 2*d.* per tally; but if the ground on the end of the brick, on which the name is painted, be included, the work costs 2¼*d.* These are at the rate of the prices given at the Chiswick garden. Neither there nor in the Mary-le-bone nursery are the names varnished; but at Messrs. Loddiges' this is done as a preservative. The young gardener's name who writes the tallies in the Mary-le-bone nursery is Chambers.

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* Mary-le-bourne, or Mary of the little brook. The channel of the brook may still be seen in the Marquess of Hertford's grounds in the Regent's Park.

Malcolm's Kensington Nursery. — *Feb.* 15. The fine specimen of Magnòl*ia* conspícua, which we figured in Vol. II. p. 370. and have more than once mentioned as well worth seeing when in bloom, shows more blossom buds this year than it ever did previously. Before this Number sees the light, it will have been a magnificent object. It is quite astonishing to us that this plant is not more common, since it can be had, of a small size, at 5*s.* 6*d.* and 7*s.* each. We should wish to see it, Wistàr*ia* Consequà*na*, Chimonánthus fràgrans, Lonicèr*a* flexuòsa, *R*òsa rùga, Noisett*iàna*, Boursaúlt*ii*, odoràta, Grevíll*ei*, multiflòra, and Bánks*iæ*, all hardy, mostly odoriferous, and all cheaper than M. conspícua, on every cottage, and against a wall in every flower-garden. We have much fault to find with gardeners in the country whose masters and mistresses are always kindly ready to hear what they have to suggest, that they do not recommend these and the other shrubs and plants which we have from time to time enumerated as worthy of a place in every garden.

Mr. Malcolm has a good stock of the autumn-flowering mezereon, a most beautiful plant, which flowers from November to March. It is little known, and, in consequence, almost entirely neglected.

April 10. The magnolia in full bloom, and truly magnificent.

Chandler and Sons, Vauxhall Nursery. — *Feb.* 17. We have neglected for the last three years to notice a handsome span-roofed green-house erected here in 1827, of which a perspective view (*fig.* 59.) and section (*fig.* 60.) were sent us by the late Mr. Buckingham, then a partner with Mr. Chandler. Mr. Buckingham says, " the roof is without rafters; and, although much lighter in appearance than that of a house framed in the usual manner, is in reality much stronger, from the equal distribution of its strength to all parts alike. The timber which is saved by not having rafters more than supplies the increased consumption in the bars, which are three inches deep instead of two inches, the usual depth. The labour of framing the lights, making top and bottom rails, and also the weather-board at top, are all dispensed with; hence the cost is less, and the appearance more elegant." The following are the details: —

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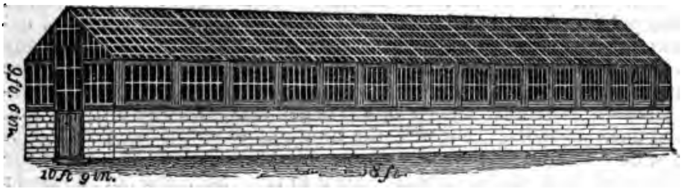
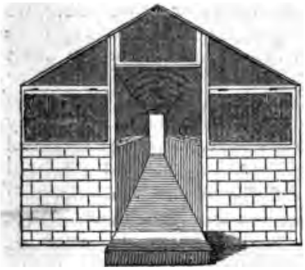

9ft. 6in.
10ft 9in.
38ft.

60



Length, 58 ft. external measure; breadth, 10 ft. 9 in. external measure; height in the centre, 9 ft. 6 in.; height of brickwork above ground, 4 ft.; height of front lights, and top and bottom plate, 2 ft. 4 in.

The plates are 4½ in. by 3 in. in the rough, and an eighth is reduced by planing. The bars are 3 in. by 1. in. in the rough, and are reduced by planing to 2½ in. by ⅞ of an inch. A stronger bar of 3 in. by 2 in., reduced to 2½ in. by 1¾ in., coupled with one of similar strength at distances of 3 ft. 6 in. throughout the whole length of the roof, and to these the cast-iron ties in the centre of the house are screwed. The width of the walk is 3 ft.; the width of the platform on each side of the walk is 3 ft. 6 in. On these the plants are set. The walls are one brick or 9 in. thick; the glass used is in panes of 7 in. by 5 in. or thereabouts. The upright lights are all removable at pleasure; and when a fourth of them are partially opened a thorough ventilation is produced. Were all the front lights, which are hung by separating hinges, taken away, the house would be merely a glass awning. The size of the house was regulated by Messrs. Chandler and Buckingham's impression of the capability of one fire to answer the purpose of excluding frost in the severest weather; and this it does completely.

This house fully answers the purpose for which it was intended. The heaths and other plants in it are in a thriving state, and on the cross ties is Calámpelis scàbra, which last summer produced seed. This plant and Cob*æ̀a* scándens have continued growing during the winter. There are various other climbers, two to each rafter, which during summer prove highly ornamental.

The show-house here is heated by hot water, by Kewley, on the siphon principle, and is one of the most perfect specimens of that mode of heating. Among its numerous ornaments are those common but now rather neglected shrubs, Coronílla glaúca and valentìna, both covered with bloom. These species, and also Coronílla pentaphýlla, argéntea, and viminàlis, all frame plants, and flowering the greater part of the season, are well deserving a place in all green-houses liable to be occasionally neglected, and where, of course, finer plants die off from cold, or from too much or too little water. They are also well adapted for training against a wall; to be protected during winter by glass or mats, and exposed to the free air during summer. Azaleas, rhododendrons, *R*hododéndron daùricum atrovìrens, *R*hodòra canadénsis, *D*áphne odòra, &c., make a fine appearance here and in the show-houses of other nurseries.

The camellia-houses are, of course, filled with the most extensive collection about London; that genus having long been the particular study of Messrs. Chandler, who may truly be said to have done more for camellias in ten years, than the Chinese have done from the beginning of the world. The beautiful work, of which the drawings are by Mr. Chandler, jun., and the descriptions by Mr. Booth, is well known and every where admired. Among the species now in bloom are the striped, Kew blush, single white, *a*lthæiflòra, waratah, and perhaps about half a dozen others. There are also several unnamed and very distinct seedlings beginning to expand their flowers. The grand show is generally from the middle of March to the middle of April; when nothing of the kind, in any part of the world, can be more splendid.

In consequence of having a number of well established stools, which make long vigorous shoots, several of the best sorts are here propagated by layers instead of grafting; which is a great improvement, both as saving labour to the nurseryman and producing a more valuable article to the purchaser. If the upper part of a grafted camellia by any chance die, the stock, being only the single red, is of little value; but, if the upper part of a plant raised from a cutting or a layer die, the lower part, the collar, or even the root, may send up shoots which will form as valuable a plant as the original one. Against a wall with a north-west aspect, the single red, the striped, Lady Hume's blush, pæony-flowered, Kew blush or pompone, Middlemist's red, and the double white camellia have stood the winter without the slightest protection, look perfectly well, and appear almost as far advanced as those in the houses. The most delicate of all the camellias appears to be Camél*lia Sasánqua* all the others, we believe, might be kept alive on a south wall well matted during the severest part of winter. To bloom them magnificently, however, a house is requisite. On the same wall with the camellias are some dozens of Magnò*lia* conspícua, large plants, well furnished with blossom buds. It is difficult to see these without exclaiming, "What a treasure for those who wish to produce an immediate effect against a new house or in a new garden!" There is here, we believe, the largest stock of this plant about London; and the same may be said of our favourites, Wistàr*ia* Consequà*na*, *Pæònia Moútan*, and its different varieties, Chimonánthus fràgrans, Lonicèr*a* flexuòsa, &c. These names, and some others before given (p. 348.), cannot be too often brought before our readers. We only wish the plants were familiar to the jobbing gardeners about London. If we had leisure, we would send a man with a cart-load of each of these plants in pots, and when in bloom, all round London, and offer them for sale at every house that had a ground plot in front, at our own risk.

Camellias seem to grow as well in pits in this nursery, as heaths do in the Edgeware Road nursery, at the Clapton nursery, and at Messrs. Rollison's at Tooting. Indeed, the practice of growing green-house plants in pits is yearly increasing in all the nurseries, and another practice with it, that of planting out green-house plants in the open ground during the summer season. Every part of Messrs. Chandler's grounds exhibits order and neatness in an eminent degree.

April 14. The camellias and Magnò*lia* conspícua are now magnificently in bloom; as are numerous large bushes of *C*ydònia japónica. Some bunches of Wistàr*ia* are also beginning to colour.

Russell's Enham Nursery, Battersea. — *Feb.* 18. A hybrid rhododendron of considerable interest is now in bloom here; its parents are *R.* arbòreum and catawbiénse: the leaves and habit of the plant resemble the former species, and in a great measure also the flower; its chief value consists in its being perfectly hardy. Mr. Russell has now some hundreds of plants five years old for sale; some in pots, and the rest in the open air, without the slightest protection. The one in bloom was forced. There is a very well-contrived span-roofed green-house here (*fig.* 61.), which is calculated to contain at least double the number of plants of any house of the kind that we have seen. On the floor (*a*) georginas or other plants not requiring much light are brought forward; on the main stage (*b*) camellias, which do not require a direct light, are grown; above them (*c*) pelargoniums; small seedlings, in thumb pots, on shelves near the glass (*d*); and flowering plants on the shelves (*e*) which border the walk. In the show-house some fine specimens of Amarýllis Johnsòni ornament the stages of pelargoniums, and P. Hùmei is just coming into flower. Mr. Russell is very assiduous, of unwearied industry, and if he perseveres we have no doubt of his success.

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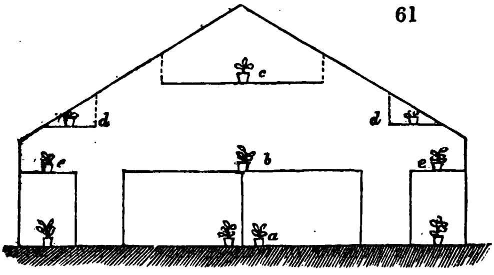

Allen and Rogers's Bolingbroke Nursery, Battersea. — *Feb.* 18. This is the reserve ground of Allen and Rogers's establishment in the King's Road: it was formerly the kitchen-garden of Lord Bolingbroke, the friend of Pope; but it exhibits no other remains of its former application, than the massive brick walls with which it is surrounded, and a large mulberry tree. Some years ago a part of this wall was covered with vines, which were thought to be among the most productive in the neighbourhood of London. Messrs. Allen and Rogers, who have had the grounds five or six years, have built several forcing-houses and pits, established stools of vines, roses, and other articles, and otherwise done what was required for the object in view; that of supplying the show-house in the King's Road with articles in blossom. In the pits we observed remarkably strong stools of green tea; a most desirable shrub for planting against a warm southern exposure, on account of its beautiful green leaves and very fragrant white camellia-like blossoms; it requires very little protection. A stake from a branch of the mulberry tree, which happened to be driven in soon after Mr. Allen took possession of the ground, has become a handsome tree; thus confirming what has been stated by our correspondent Superficial and others. The mulberry, however, does not grow very readily from young cuttings.

Dennis and Co.'s Nursery, Grosvenor Row, Chelsea. — *Feb.* 18. We regret that we did not sooner visit the grounds of this extraordinarily successful cultivator. His garden is of small extent, and his houses though numerous are not very specious in appearance; they contain, however, more plants than, we should suppose, any houses of the same size about London; because almost all the plants are in very small pots, for the convenience of sending to a distance in little bulk. Mr. Dennis possesses about 700 varieties of pelargoniums, or, as they are usually called, geraniums, and estimates his stock of plants at from 15,000 to 20,000; of which 6000 are in what are called thumbs, that is to say, pots not larger than the flower of a tulip. As the reason for an unusual name ought always, in this Magazine, to be made known where it can, for the benefit of the young gardener, we may state that, in moulding all pots above the size of thumbs, the potter keeps his fingers within and the thumb outside the pot; but, in moulding thumb pots, the thumb alone is kept inside.

Pelargoniums, georginas, and *Cácteæ* seem to be the main articles of propagation by Mr. Dennis, though his collection contains many other objects of interest. Of Cèreus speciòsus, speciosíssimus, truncàtus, and Jenkinsòni, we observed many hundred plants of various sizes. A plant of C. Jenkinsòni had ripe fruit, the fruit having spines like the wood; C. truncàtus was also in fruit, a thing by no means common; the other species mentioned had several large and handsome fruits, some of which had been muled, as the phrase is, with a view to creating new varieties. On a plant of Peréskia aculeàta Mr. Dennis has grafted twenty species or more of *Cácteæ*; most of them being what is termed double-worked: that is, upon the Peréskia are worked Cèreus speciosíssimus, C. cylíndricus, C. flagellifórmis, *O*púntia brasiliénsis, and another species of *O*púntia; and upon these, as stocks, are worked another series. On the C. flagellifórmis, for instance, are worked two varieties of C. truncàtus, C. Jenkinsòni, C. Vandèsii, C. speciòsus, C. speciosíssimus, C. grandiflòrus, *O*púntia curassávica, Echinocáctus tenuispìna, and other species and seedlings without names. On one of the *O*púntiæ first worked on Peréskia, C. speciòsus has taken; and on the C. speciòsus, which is worked on the C. flagellifórmis, as noticed above, two species of *O*púntia are engrafted, making the fourth series of plants reckoned from the soil. This plant is quite a vegetable curiosity, and will have its admirers. Mr. Dennis is considered by his brethren to be one of the most successful propagators, in the neighbourhood of London, of the plants to which he applies his attention, even if they be plants very difficult to increase; and very rare articles have been multiplied by him, while they have been lost by others. We wish he were in possession of all the rarities of Kew, for he would soon root them into all the collections of the country. Wistà*ria* Consequà*na* is propagated by cuttings from the root, which generally require two, and sometimes three, years before they send up shoots. The common black mulberry is admitted to thrive better in this nursery than in any other about London. Young plants make shoots from 2 to 4 ft. long; and, from their growing so freely, the stems are very strong and straight, and some of them from 7 to 8 ft. high. This is the more remarkable, as they are in an atmosphere almost as smoky as that of any part of the city. The *Aúcuba* japónica thrives here as well as the mulberry, and these two objects Mr. Dennis cultivates in quantities. He has also fine specimens of tall single-stemmed standards of the guelder rose, and the Siberian and other lilacs, Irish ivy from 10 to 15 ft. high in pots, and thousands of plants of *G*entiàna acaúlis. It would be useful to know all the plants that will thrive in the smoke of cities; and here are facts towards this knowledge. Some of Mr. Dennis's georginas, which he is bringing forward in hot-beds for transplanting, already show their flower-buds; so that he will have a display from May to November.

A piece of ground is taken by this ingenious gardener, in the King's Road, next to Mr. Knight's, where he intends, during the ensuing summer, to give scope to a very extensive display of georginas, choice annuals, and other flowering plants, and whither he will progressively remove the show part of his establishment. Nearly an acre is prepared beside the King's Road for the display of georginas, and nearly half an acre at the other end of his ground, which fortunately lies beside the Fulham Road. All this is laid out ready, in rows 6 ft. apart; the distance between the plants in the row to be regulated by the habit of each; the dwarfest to occupy the foreground. Considering that a list of the very earliest and very latest flowering of the pelargoniums would be valuable to those who can possess only a small collection, we requested Mr. Dennis to furnish us with a few names in the order of their flowering, which are as follows: —

EARLY.	LATE.
Hùm*ei*, Crimson purple; 1*s*. 6*d*.	Princess Augusta, Scarlet; 5*s*.
Pálk*ii*, Red; 2*s*.	Weltje's Sydney, Crimson; 10*s*. 6*d*.
Albinotàtum, Purple; 1*s*. 6*d*.	Gloriànum, Crimson; 5*s*.
*M*alachræfòlium, Red; 3*s*. 6*d*.	Flàgrans, Red; 3*s*. 6*d*.
Bright*iànum*, White; 2*s*.	Instràtum, White; 5*s*.
Láxulum, Rose; 5*s*.	Gowèr*ii* supérbum, Red; 2*s*. 6*d*.
Spectábile striàtum, Red; 1*s*.	Spéculum, Red; 10*s*. 6*d*.
*Q*uercifòlium supèrbum, Scarlet; 10*s*. 6*d*.	Coilophýllum, Orange scarlet; 3*s*. 6*d*
Ursìnum, Rose; 10*s*. 6*d*.	Tínctum, Clouded; 3*s*. 6*d*.
Glabréscens, White; 3*s*. 6*d*.	Megalóstictum, Purple; 2*s*. 6*d*.
Urbànum, Rose; 2*s*. 6*d*.	Yeatman*iànum*, Clouded; 5*s*.
Lacòniæ, Red; 2*s*. 6*d*.	Fairliè*æ*, Lilac; 2*s*.

Lee's Nursery. — *Feb.* 23. The plantation of standard roses at the entrance of this nursery, correctly placed in regard to distance from each other, height, &c., and most scientifically pruned, produces an excellent first impression. We could name a nursery where the standard roses which border the main walk do not seem to have been pruned for two years. The impression made by the rose plantation is kept up by the high order and keeping of the margins of select shrubs and trees which border the broad walk leading to the hot-houses. In these borders are some very handsome specimens of Magnòl*ia* purpùrea covered with blossom-buds; one of *R*hododéndron daùricum atrovìrens, 4 ft. high, the bloom just on the point of expansion, a most desirable object; a double-blossomed Chinese cherry, the blossoms apparently ready to expand. This is a singular tree, as being readily propagated by cuttings, and valuable as an early flowerer. It serves to confirm Mr. Bishop's theory (see *Causal Botany*, vol. vi. p. 99.), that the most useful plants for culture are to be sought for among varieties rather than among species. Lonicè*ra* tatárica, an early-flowering species, showy and cheap. Dírca palústris, a singular shrub, or rather tree in miniature, since the stem rises without branches to the height of 9 in., and then forms a compact globular head 2 ft. in diameter, without sending out suckers. Cunninghàm*ia* lanceolàta has stood in this border several winters, without protection. Handsome bushes of *C*ydònia japónica, white and red; *R*hodòra canadénsis; several daphnes; and that fine showy evergreen the double-blossomed furze, just showing its bright yellow flowers.

In the stoves, Cypripèdium venústum (*fig.* 62.), a charming plant, coming into bloom; and the blossoms of Epidéndrum cochleàtum are already expanded. In the green-houses, besides heaths of several sorts (see the valuable monthly lists of Messrs. Rollison in Vol. I. p. 366.), various New Holland Leguminòsæ, cinerarias, Chinese primroses, cyclamens, and camellias, there are *A*càcia longifòlia and bracteàta, Dryándr*a* falcàta, Grevíll*ea* punícea, and a number of New Holland shrubs. A large plant of Lyttæ'*a* geminiflòra had thrown up a stem in the autumn, which, had it not damped off, would probably have reached the height of Mr. Knight's plant, which we figured in a former Volume. (Vol. II. p. 96.) The remains of the Hammersmith plant are 7 ft. or 8 ft. high. In the long grape-house, planted with upwards of 200 sorts, or at least names, for the sake of proving them, the buds of the vines are just beginning to burst. These vines bore last year, for the first time since they were planted (about seven years ago); a circumstance to be accounted for from their having been pruned too close. The blossom-buds of vines, when the plants are young or on poor soil, or when the tree is any way weak, are always at four or five buds' distance from the commencement of the young shoot. In the case of vines firmly established on rich deep dry soil, such as that of the late Mr. Andrews, at his pine and grape garden, Vauxhall, they may be pruned in any way, with a certainty of the current year's shoots, however produced, being furnished with blossoms. Accordingly, Mr. Andrews always cut close to the old wood. For this theory we are indebted to Mr. Money of the Haverstock nursery, who, we should suppose, knows as much of vines as any gardener about London. Whoever is acquainted with the botany and gardening of England during the last century, must venerate this establishment and the names of Lee and Kennedy.

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Brompton Nursery, Messrs. Gray and Son. — *Feb.* 25. We never enter these finely lying grounds, and look down the broad interminable walk, without thinking on London and Wise, and the other eminent gardeners of the time of James II., when this nursery was established. The grounds were then much more extensive than they are now, but the main walk from the entrance could scarcely have had a better effect. It descends, winding with a gentle slope, to the south, and seems to lose itself in one great valley of trees and shrubs. We walked down to look at the row of venerable stools of vines, which must, together with the wall against which they are placed, be as old as the nursery. We passed a plantation of mezereons in bloom, remarking the great variety in their colours, one or two being of so very intense a red that it would be well worth while to continue them by layers. The autumn-flowering mezereon has doubtless been discovered by accident in the like manner, and by this mode of propagation is deservedly perpetuated. On returning, we entered the green-houses, and looked at the pits, and found one or two plants worth noticing. There is a good stock of Cotoneáster microphýlla, a pretty little hardy evergreen shrub, which

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ought to be better known; of Cistus and Heliánthemum, among others *C.* Cupaniànus (*fig.* 63.); of Symphòria glomeràta variegàta; Véstia *l*yciöìdes, a good plant for turning out in borders; and Medicàgo arbòrea, an old half-hardy shrub, now scarce. Notelæ'a *l*igústrina in fruit, a desirable half-hardy shrub, very much resembling the common olive. In frames, the herbaceous plants set in ashes are in a thriving state; and also the arbutus, and other evergreen shrubs, in fern, moss, and straw.

The Fulham Nursery, Messrs. Whitley, Brames, and Milne. — *March* 10. This is one of the most delightfully situated nurseries about London, from the abundance of villas and fine old exotic trees and shrubs with which it is surrounded. Considering its antiquity, and that some of the finest American plants were first sent here, and hence distributed all over Europe, it may be considered by the gardener as classic ground. There is one enclosure which still bears the name of Catesby, having been devoted to the plants sent home by that botanist.

The herbaceous ground here is at all times refreshing to the eye. Among the early flowers, we noticed *C*orydàlis tuberòsa, very strong; Pulmonària virgínica; *S*cílla, several species; Muscàri racemòsum, &c. As a very rare herbaceous plant, though not in bloom, we may name the Echinóphora spinòsa. Among the herbaceous plants in pots are, a new species of *N*arcíssus, very small, with deep green rushlike leaves; *L*eucòjum vérnum, just out of flower; Soldanélla alpìna, and *S*axífraga oppositifòlia, brilliantly in flower. Among the shrubs was *Bérberis* glumàcea, with its fine large compound persistent deep green leaves, just coming into flower, well worth purchasing; Collètia serratifòlia, a curious diminutive deep-green-barked shrub, little known; *A*'rbutus procèra, half-hardy; *J*uníperus chinénsis, in blossom, a fine hardy shrub, and very showy at this season; *Ribes* multiflòrum, a showy currant, with bunches of blossom 6 in. long. No fewer than seventy-five sorts of *C*istíneæ, all correctly named according to Sweet, and all the plants in small pots, ready to be sent to any part of the country at any season of the year. Large tufts of *E*rìca cárnea have been in flower all the winter, and still continue in perfection. There is a good stock of rare species of *P*ìnus, and of the foreign varieties of Azàlea. The stools of camellias and the different varieties of tree pæony are coming finely into flower. Opposite the entrance to this nursery are two handsome villas, occupied by single ladies, eminent London milliners, which gives a gratifying idea of the wealth and taste of persons in this line of trade.

Knight's Exotic Nursery, King's Road. — *March* 18. The effect on entering is excellent; the termination of the telescopic vista being the bronze vase with its jet d'eau, backed by two splendid plants of striped camellia covered with bloom, through which appears enough of light to give the idea of continuation. The bronzed vase, which is about 6 ft. in diameter and weighs several tons, is painted blue on the inside, and has a very cheerful and elegant appearance. In the large curvilinear conservatory, a *R*hododéndron arbòreum is coming into flower, and in a fortnight will have a splendid appearance. So abundant is the honey secreted by these flowers, that when they are shaken it falls from them like large drops of rain. Mr. Knight believes a spike of flowers may yield from a teaspoonful to a dessert-spoonful at a time, and after being exhausted a fresh supply is secreted; so that the quantity which one spike may produce appears unlimited. It is not ascertained to be perfectly wholesome; but the honey of the greater portion of the *E*ríceæ is so, notwithstanding the deleterious qualities of that of certain species of Azàlea. Mr. Knight has raised a great many hybrid seedlings between this and the hardy rhododendrons, and finds a number of them endure the winter in the open air without any protection. None of these have yet come into flower; which is something to look forward to. Among the plants in this conservatory worthy of notice at the present time are :—Lady Hume's and Middlemist's Blush Camellias, very large plants, finely covered with flowers; and a standard of C. *Sasánqua r*òsea plèna, 5 ft. or 6 ft. high. This species, being a very fine bloomer, is well calculated for naked-stemmed standards, which, after the plants have attained a certain size, must form striking objects. Magnòl*ia* fuscàta, 14 ft. high, which has ripened seeds from which Mr. Knight has raised young plants. Wistàr*ia* Consequà*na*, trained perpendicularly, and the side shoots tied drooping during summer, by which means they become covered with blossom buds. The practice affords an excellent hint to gardeners, not only with regard to this plant, but to various others that it may be wished to cover with bloom. Illícium parviflòrum, from 3 to 6 in. high, with two or three blooms on each, fully expanded; Azàlea índica, and índica phœnícea, handsome plants in bloom; Hòve*a* Cél*si*, with its beautiful deep blue pea blossoms; a number of acacias and other Australian plants coming into flower, and Bánks*ia e*ricifòlia going out. The whole are in the greatest health, beauty, and order. In the hot-house Mr. Knight finds that the orchideous epiphytes do much better in *S*phágnum than in *B*rýum or any other kind of terrestrial moss. The georginas are here producing shoots, which, as soon as they get from 4 in. to 6 in. long, are slipt off and struck as cuttings; Mr. Knight, like Mr. Wood of Deepdene, preferring this mode to planting the roots. The same thing might, no doubt, be practised with potatoes, sweet potatoes, yams, and other tuber-producing plants; but, unless the soil were rich, and the culture good, it would be attended with loss of time, the tuber containing a supply of nourishment for the infant plant being not always to be readily obtained by art. In the orangery Mr. Knight is trying a curious experiment with camellias and other plants, by inverting them, enveloping the pots in moss, and forming with clay a basin on their bottoms to introduce water by the hole through which that element generally escapes. Several camellias set down on the floor of the house have pushed an inch, while others, suspended in an inverted position from a shelf near the roof, and consequently in a warmer atmosphere, have remained stationary. Retardation, therefore, is one effect of inverting plants; but Mr. Knight's object is, if possible, to throw some light on the rise and descent of the sap. For the same object he barked the stems of a number of standard pear trees in the open air last May or June. Some of them had died, but most of them lived, forming a callosity in the usual manner, depending from the bark at the upper edge of the wound. In one or two cases, where the soft wood under the bark had not been very cleanly scraped off, a thin coating of bark had formed over the greater part of the disbarked stem. Such a tree will probably recover, but the others are certain of dying in a year or two; in the meantime, however, bearing large crops of fruit.

On a shelf at the top of the back wall of the orangery, which is, in fact, the sanctum of the Exotic Nursery, are the principal part of the plants raised from the Australian seeds brought home by Mr. Baxter, and also the stools of Telòpea speciosíssima and the plants of Cephalòtus folliculàris. The whole are in excellent health, and promise various novelties: one of these will be a new Kennèd*ia*. The banksias and dryandras are beautiful little plants, and quite the gems of the sanctum. The plant of the terrestrial mistletoe (Loránthus terréstris, Lorántheæ), brought home by Mr. Baxter, unfortunately appears to be dead.

In one of the propagating houses is a number of plants of Magnòl*ia* citriodòra, a hybrid of which Mr. Knight is the sole possessor, and which he has not yet exposed for sale. It is considered a most valuable acquisition to the known species of this family. In the same house are plants of the rare *Andrómeda* arbòrea, and a number of seedling camellias produced from crosses, in which the parents have been selected on the principle adopted by breeders of live stock with a view to improvement. There are also seedling hybrid rhododendrons here produced on the same principle. These plants are valued by Mr. Knight very highly. Above a score of young plants of *Araucària* imbricàta, and many plants of Cunninghàm*ia* lanceolàta; both of which, from their habitats in their native countries, may one day be found quite hardy. In another house is a good stock of imported orange trees from Malta, including all the best kinds grown in that island. Among these is the mandarin orange, remarkable for its perfume as well as its flavour. It separates from the rind like the kernel of a nut from its shell, without any trouble of peeling or paring, and has been very appropriately designated by the Chinese as the aristocrat of the orange family. It is much to be regretted that oranges, and especially the mandarin and blood-red Maltese varieties, are not more cultivated as dessert fruits. They would thrive admirably, treated like peach trees, as at Wood Hall in West Lothian, or as at Fion's in Paris. Mr. Knight practises extensively, with his oranges, camellias, tree rhododendrons, and other house plants, what may be called eking pots, by raising on them, from the height of from 3 in. to a foot, rims of tempered clay, filling the space within with earth; by which means an increase of space for the roots is obtained in less room than if a larger and broader pot were made use of. Mr. Knight finds that oranges do not agree with being often disturbed, and that shifting once in three or four years is sufficient. We believe the same thing holds true of camellias, and also of the whole of the natural order *Ericeæ*. In this and other propagating houses Mr. Knight maintains a greater degree of artificial heat at this season than is necessary for the preservation of the plants, in order to accelerate their growth betimes, and thus prolong their summer, and get their shoots well ripened before winter. All these propagating houses are backed against each other in such a manner as to form large quadrangular masses, by which means the greatest quantity of area is obtained at the least expense of material and the exposure of the smallest quantity of surface to the external air for the escape of heat.

We have before had occasion to notice the order and regularity maintained in Mr. Knight's packing and potting sheds; but, we believe, we omitted to mention that his potting benches are of broad flag-stone, with raised wooden edges for striking the pots against to loosen the balls. Durability is the object of the pavement. We should have liked the power of heating the potting sheds, as in the long shed at Mr. Lee's and in all those erected by Mr. Forrest at Syon. The men, by being rendered more comfortable, do much more work, and the plants are likely to be gainers. A few years ago, a nurseryman, or indeed a gentleman's gardener, who would have taken any thought about the comfort of his men, or at least so much as to heat their potting sheds, would have been stigmatised as a sentimentalist who would spoil them for work; but the times are altering, and gardeners, as well as others, are making the discovery that all men are naturally equal, and that the only artificial distinction which confers any superiority is that produced by knowledge and manners. What existed fifteen years ago among gardeners and country labourers will hardly be credited fifteen years hence; such is the ratio of human improvement when its progress extends to the mass of society, and when the mass and the directing powers are in pursuit of the same end. Mr. Knight's packing sheds being open, and all under one roof, are well calculated for easy superintendence; though, being exposed to the north, they must be cold, and the operations of packing are not all such as to enable a man to keep himself warm.

In a border outside the orangery, Alstrœmèr*ia* pulchélla and bícolor have stood the winter without protection, and are sending up vigorous shoots. We should not be surprised at the whole of this family proving hardy. Mr. Knight has lately made an extensive importation of azaleas, rare sorts, and large admirably grown plants, from the Netherlands. As we stated on a former occasion (Vol. VI. p. 379.), no one need hesitate in purchasing large plants of the *E*ríceæ, because their hairlike roots readily admit of their being taken up with balls.

One of Mr. Knight's practices, with respect to peach and nectarine trees, deserves to be mentioned for the imitation of all nurserymen. All those trained trees that have not been sold are taken up about the first week in March, and pruned both in their top and roots. The latter are placed on a flat surface of richly manured soil within 4 in. of the upper level of the common surface, and covered with no more than 4 in. of earth. The roots before covering are as carefully spread out in the fan manner as the top is in training. The advantage of this mode is, that the influence of the sun is earlier felt by the roots, and the sap of the tree sooner put in motion; while, at the same time, from the roots not being deep in the soil, so as to procure abundance of moisture in the midst of summer, their growth is sooner checked, and the wood better ripened before winter. It is evident that such trees must not only take up and remove with a greater number of roots than those treated in the usual manner, but that they must also come much sooner into a bearing state. Mr. Knight has a great many rare species and varieties of new trees and shrubs, and he is one of those nurserymen to whom we look for cultivating collections to illustrate the natural orders. We shall conclude these desultory remarks with the name of a truly desirable and rare tree, beautiful from its deep green pendent shoots in winter and pinnated foliage in summer, *Sophòra* japónica var. péndula.

April 13. The *R*hododéndron arbòreum is in full bloom, and the colour brilliant beyond description. As the plant is half-hardy, and may be kept in a cold pit, it ought to be in every collection. Wistària, near it, is magnificently laden with large purple pea blossoms hanging like bunches of transparent grapes.

London to Goldworth, Surrey.—*April* 3. A row of sycamores, planted along a brook at Brook Green, vary so much in the forwardness of their budding, that, while some are almost in a dormant state, one or two have actually leaves expanded; the same as to horsechestnuts, which we observed afterwards; affording striking proofs of the individuality of plants raised from seed, as contradistinguished to the sameness of those raised from cuttings, layers, or in any mode by which the bud is substituted for the egg or seminal embryo. In various cases, such as those of planting for shelter, or near a house or garden, it might be well worth while to select from the seedlings of different nurseries the earliest varieties of the kinds of trees to be planted. There are no trees that differ more in their periods of foliation than the oak and the hawthorn; and it might certainly be desirable, under extraordinary circumstances, to have oak woods and hedges green a fortnight before the usual time. The oak, the beech, and the hornbeam are trees which differ very much in their periods of dropping their foliage; and, on the same principle, when they are intended for hedges or shelter, seedlings might be chosen from the nurseries in which the leaves appeared most persistent. A small larch, at Turnham Green, has taken so completely the character of a shrubbed cedar of Lebanon, that, being now in its first foliage, it is difficult, at a distance, to distinguish it from that tree. Here and there, along this road, appears an unfinished house, reminding one of bankruptcy and the Court of Chancery. Abundance of public-houses, and signs advertising an ordinary on Sunday, which suggest ideas of holiday enjoyment. A neat newly built villa at Turnham Green, so placed at an angle as to look along the road towards London, instead of across it, to fields and gardens; probably the seat of a retired coach proprietor. Near the turnpike-gate, beyond Brentford, in the Duke of Northumberland's grounds, a large handsome myrobalan plum tree, in full flower. The father of Mason, the author of the *Essay on Design in Gardening*, was a distiller in Brentford. George Mason died fifteen or twenty years ago. What has become of his books? Did he leave any manuscripts? Can and will any of our readers oblige us with information concerning this gentleman? There must certainly be some person living at Brentford, or some one connected with the Sun Fire Insurance Office, of which Mason was a director, who could gratify our curiosity. Mason's *Essay* was published before Whately's *Observations*. Another fine myrobalan plum in Ronalds's nursery, and near it some fine yellow-barked ash trees: these must have an enlivening effect among evergreens; indeed, evergreens in quantity, without a judicious sprinkling of deciduous, gay-barked, or early flowering trees or shrubs, always look dark and heavy in spring. The yellow ash, golden willow, snake-barked maple, white-barked birch, red dogwood, white-barked honeysuckle, and some others that may be observed in walking round Loddiges's arboretum at this season, are fitting plants for the purpose in view. A number of modern street-like cottage buildings, forming a sort of village a little beyond Ronalds's nursery, on the Isleworth Road. As the gardens here have been lately planted, they afford a fair specimen of the degree of progress which cottage ornamental gardening has attained in the western neighbourhood of London. The most showy plants at the present time are the almond, the Cydònia japónica, and Kérr*ia* japónica. China roses trained between the doors and windows, and vines on the upper part of the house, are common. Among the flowers, violets, *A'*rabis álbida, daffodils, crocuses, polyanthuses, wall-flowers, daisies, Pulmonària officinàlis, and others. In ten years the *Rìbes* sanguíneum will certainly be added to the shrubs and tulips, hyacinths, and other bulbs, with numerous Crucíferæ and North American Labiàtæ and *S*axifràgeæ to the herbaceous plants In the hedges farther on, Ficària, Glechòma, the barren strawberry, daisy, dandelion, and the large furze in flower. Various species of poplar in blossom; one, the Carolina, we believe, with long pendent bright red catkins; the hoary poplar has purple catkins. The ash and elm are also coming into blossom. Passed some very large old oaks, which have evidently been pollarded at some former period; and hence the trees, though exceedingly picturesque, are of no value as timber. For the same reason they want dignity of character, which in all cases, whether of men or trees, is mainly founded on utility. Even a timber tree, whose wood is not reckoned of much value, such as the alder, the hornbeam, or the willow, whatever may be its form, wants, on that principle, the degree of dignity of character possessed by the oak, the ash, and the elm.

Fine Situation of Mr. Scott's House at Shepperton. — Fine; because so placed, on an elbow of the river, as to command extensive views up and down the stream. A house beside a river, on the shores of a lake or of the sea, or at the foot of a mountain, never suffers in grandeur of character from want of territorial extent, because the character of nature in such situations is so powerful as to overcome artificial associations; and no one ever thinks of purchasing a river, a lake, or a mountain; or regrets his inability to make alterations which he knows it is not in the power of man to effect. No one, also, ever thinks of complaining of the nearness of a boundary which is placed there by nature, on the same principle that no one thinks of cavilling at what is inevitable. In professional language, the views from a gentleman's seat so situated appropriate the grand feature of nature as a part of the demesne; and the same thing may be stated of the views from all the houses of all the inhabitants of districts of country abounding *in such scenery*. Hence the real and very considerable difference *in character between* the native of the champaign and of the alpine country, and between the inhabitant of the sea-shore and of the secluded inland valley. The poorest resident amid the lakes and mountains of Cumberland, or in the valleys of Switzerland, feels that the mountains, lakes, and cataracts, which surround him, belong as much to him as to the greatest lord of the place. He sees and feels every day that the grand movements of nature can no more be influenced by the one than by the other; and the poorest in the place learns by degrees to feel himself as independent and noble as the richest.

Altogether the road from Shepperton along the Thames to Chertsey is of great beauty, and truly English, from its extent of flat meadow and gently rising grassy surface. Some substantial well kept old villas are situated to the right, close along the road. A modern one, said to belong to a wealthy coachmaker, displays an extraordinary assemblage of hot-houses, and a conservatory which forms an entrance to the house close to the road, the front of which is ornamented with caryatides. This is one of those few places in the neighbourhood of London which are on no account ever shown to strangers; the probability is, that it contains little worth seeing, since it has attained no celebrity in the gardening world, and the gardener is not known among his brethren. But all this on our part, having been once refused admittance, may remind the reader of the fox and the sour grapes. Almond trees backed by evergreens; by ivy against a house; or even when accompanied by a mass of dark green in the same view or eyeful, have a fine effect. Every coloured view, to please the eye, must have at least three colours, and these in different quantities, so that the view may form a whole in regard to colour, as well as it must in regard to form and to light and shade. If there be any coloured view that does not contain three colours, which is pleasing; or any view in which light exists without two degrees of shade, or shade without two degrees of light, that is satisfactory; the cause of the pictorial beauty will be found in some striking expression or character of form. The reason of all this is, that nothing can be beautiful which does not form a whole; that every whole must consist of parts; and that the smallest number of parts which will compose a whole is three. Why will not two parts compose a whole? Because no two objects can be placed together in a determinate manner, or in a manner for which there is an obvious cause. Add a third part to any two parts; and there is immediately assigned a reason for the position of the three parts respectively; that is, it henceforth becomes impossible to change the position of any one of the three parts without affecting the other two. Something, in short, analogous to length and breadth and thickness is produced, without which there cannot be quantity, or a whole.

Addlestone Nursery. — Walk from the inn at Chertsey to the Addlestone nursery. The cottage gardens exceedingly well cultivated, and the plantations, having been planted a few years ago, when the common was enclosed, contain a reasonable portion of ornamental trees. A number of rare and curious plants in flower in Mr. Cree's grounds, and the houses and pits in excellent order. Mr. Cree possesses nearly if not all the plants enumerated in his *Hórtus Addlestonénsis;* which is saying a great deal for his unwearied industry in collecting them, and his skill and care in their preservation. Sanguinària canadénsis and Helònias bullàta, in full bloom and in quantity. Some *Ribes* sanguíneum, raised from seeds received from the Horticultural Society, of shades of colour as different as in the case of seedling mezereons. *Fúchsia* virgàta, in an open border facing the east, protected by litter, has died down to the surface, but is now springing up again with shoots 2 in. long.

A little beyond Addlestone, a very steep ascent to a bridge, which we were told was raised thus high in order that it might become an object from a neighbouring gentleman's seat. Would it be possible to convince a country gentleman, who in this way preferred his own gratification to the public advantage, that he would enjoy more real happiness in preferring the public benefit to any private pleasure whatever? Perhaps the attempt must only be expected to succeed with his children. Nothing is more difficult than to convince the great mass of the wealthy in all countries that wealth such as theirs is not essential to happiness; and that no one, whatever he may possess, can be said to be truly happy, who does not wish well, with all his heart, to the whole of mankind in every country.

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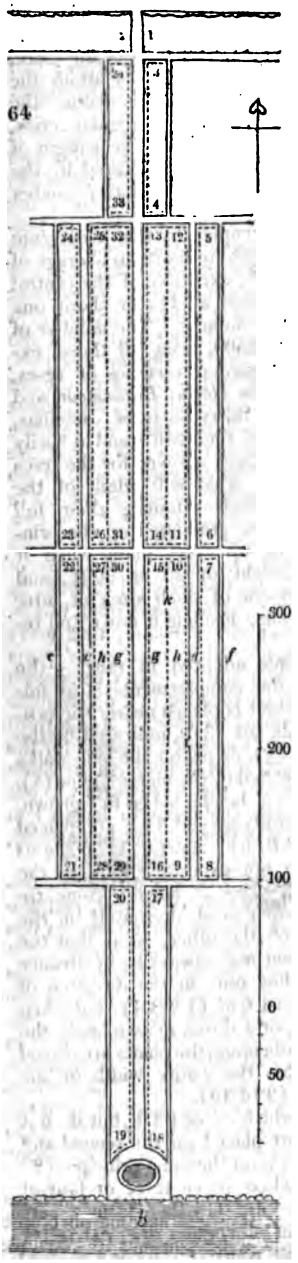

The effect of the flowers of the common furze on the waste, and along the margin of Lord King's woods, is brilliant. In September last, however, the dwarf whin and the purple heath were still more brilliant. In gardens, the double-blossomed large furze and the *Ribes* sanguíneum form excellent plants to group together. The *Ribes* sanguíneum, if it should ripen seeds freely in this country, will soon be disseminated by the birds to such an extent as to make it appear a native. Fine effect of the canal traversing the heath, as showing the power of man, and recalling to mind the commerce and riches of the points where it originates and terminates, viz. Liverpool and London. Arrived at the hospitable mansion of the owner of the Goldworth nursery.

Goldworth Nursery. — *April* 4. Agreeably surprised to find that Mr. Donald had collected so many of the 2500 trees and shrubs, which, exclusive of roses, are requisite to form an Arborètum Británnicum. Proceeded with him to take the levels of the centre walk of the nursery, so as to render it one uniform slope from the public road between Woking and Bagshot (*fig.* 64. *a*) to the Basingstoke canal (*b*). Marked out the alleys (*c d*) 4 ft. wide, and the smaller alleys (*e f*) 2 ft. wide; a marginal line to bound the plants on each side of the centre walk, 3 ft. from the edging (*g*), and on each side of the 4 ft. alleys 2 ft. from the edging (*h*); and a separation line along the centre, between the two marginal lines in the larger compartments (*i k*).

In arranging the trees, the first order and tribe are *R*anunculàceæ *C*lematídeæ, which are to be planted on each side of the entrance, for the purpose of being trained over an archway of trelliswork (1 2). The next tribe is *R. Pæoniàceæ*, which, as it consists of plants not growing above 5 or 6 ft. high, forms a zigzag line,

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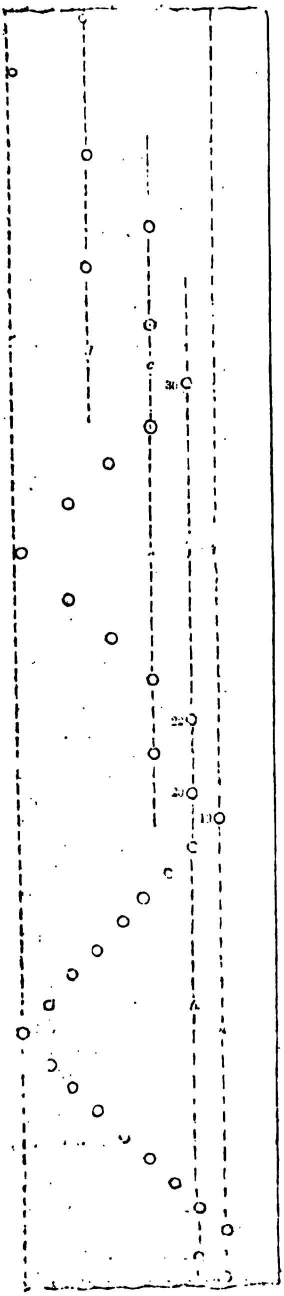


on the principle explained in *Illustrations*, plate II. and p. 3., near the walk. The next order, being Magnoli*àceæ*, forms an irregular zigzag line, extending from the marginal boundary to the back of the space, because some of the species attain the height of 30 or 40 ft. In this manner the orders and tribes follow in regular series, but in irregular lines, along the margin of the walks and alleys, as indicated by the figures 1 to 34, ending at the latter number with *Tulipàceæ*.

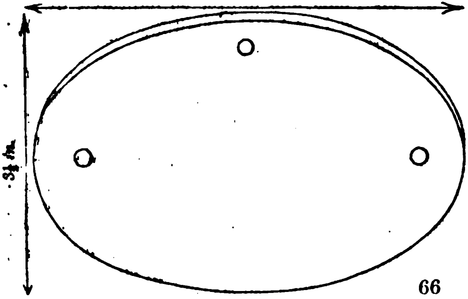
The space occupied by this arboretum is 3530 ft. in length by about an average of 12½ ft. in breadth, exclusive of the central and side walks and alleys; or about one and one third of an acre. The number of plants exceeds 2500, being all those, exclusive of the garden varieties of roses, enumerated in the *Hórtus Británnicus*, and from twenty to thirty sorts of camellias, which Mr. Donald finds will stand as hardy shrubs. The spaces allowed for the trees are nothing like what will admit of the larger-growing kinds attaining their full size; but they are graduated on the principle of taking up every plant when it attains the height of 20 or 30 ft., and replacing it by one of small size; or, after cutting its roots, heading it down and replanting.

The principle adopted in ranging the plants along the compartments is as follows: — No plant is placed nearer the central broad walk than 3 ft., indicated by the marginal line (*g*), or nearer the side walks than 2 ft., indicated by the marginal line (*h*). All plants whose height, when full grown, does not generally exceed 3 ft., are placed on two lines 1 ft. 6 in. apart. (*fig.* 65. *a b*) When two, or not exceeding four, of the plants of this class of heights come together, they are placed alternately on the one line and on the other, so as that the last placed plant may always be in advance of the preceding one, in the direction of the walk, at least 6 in. (1 2 3 4); but when there are five, or a dozen or two, as in the case of Heliánthemum, the plants are placed in series across the entire width of the compartment (3 to 19).

All plants which exceed 3 ft., but do not exceed 6 ft., are placed on the second and third lines (*b c*), on the same principle (20 21 22); but when above three or four of such plants occur, they then form a part or the entire of an angular line, extending across the whole width of the compartment (22 to 30).

All plants exceeding 6 ft., and under 20 ft., are placed on the third and fourth lines (*c d*), and all plants exceeding 20 ft., and under 100 ft., are placed on the fourth and fifth lines (*d e*); both on the same principle as the smaller plants, and both varied from the principle in the same manner, when more than three of the same height occur together. Some deviation is also made from the principle in the case of very rapid or slow growing plants, and on other accounts that will readily occur in practice to every gardener who has had any experience in planting trees.

The plants are to be named on white porcelain tallies (*fig.* 66.), fixed to cast-iron shanks (*fig.* 67.): the tallies are furnished by Granger, Lee, and Co., porcelain manufacturers, Worcester, at 8*l.* a thousand; the iron shanks are supplied by a foundery at Guildford, at about the same price; and the names are painted, accented, and varnished, at one penny a word, or little more than 2*d.* a tally, by John Thompson, of No. 4. Earl Street, Blackfriars, who transcribed the whole of the *Encyc. of Plants* and the *Hórtus Británnicus*, and who is now executing the task with great beauty, and with a degree of accuracy which would not easily be attained by a person not accustomed to spell and accent botanical names. The paint used is composed of boiled linseed oil, charcoal black, a little gum, and a little turpentine; the whole mixed well together, and thinned with oil, till it is about the consistence of cream. The mixture is put in a bladder, and kept close from the air, and it is taken out in small quantities, as wanted for use. Copal varnish is that made use of; the names taking about a week to get perfectly dry before varnishing, and another week before they are fit to fix to the shank. The last process is effected with two screw-nails.



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Mr. Donald has received every assistance from the trade in collecting the specimens necessary for this arboretum; a circumstance which we consider as highly creditable to all parties, and which we trust will be imitated in the case of other nurserymen forming similar arrangements. We hope the time will soon arrive, when all the principal nurserymen, in every part of the country, will not only form collections of fruit trees, such as we have lately recommended, for the supply of scions for grafting; but arboretums of timber and ornamental trees and shrubs, to invite their customers to examine their beauty and variety; and collections of herbaceous plants, to induce the public to study botany and purchase flowers. Every large nursery will be then a botanic garden and a complete orchard; and as every large town has a large nursery, the enjoyments and rural knowledge of the townsmen will be very greatly increased. The taste for country enjoyments which will thus be created, will cause thousands to pant for a country life who now consider nothing desirable beyond the limits of a town. This new taste will teach men that there are other sources of happiness besides the accumulation of money, and, by a process which it is needless to detail, will tend to general prosperity and happiness.

No small praise is due to Mr. Donald for the expense and trouble he has incurred in the present undertaking; but we have no doubt that he will be richly repaid by it, and the whole trade will gain considerably by the taste which will be created, or at least greatly advanced, for new and ornamental *trees and shrubs.* Mr. Donald will propagate, from his arboretum, the

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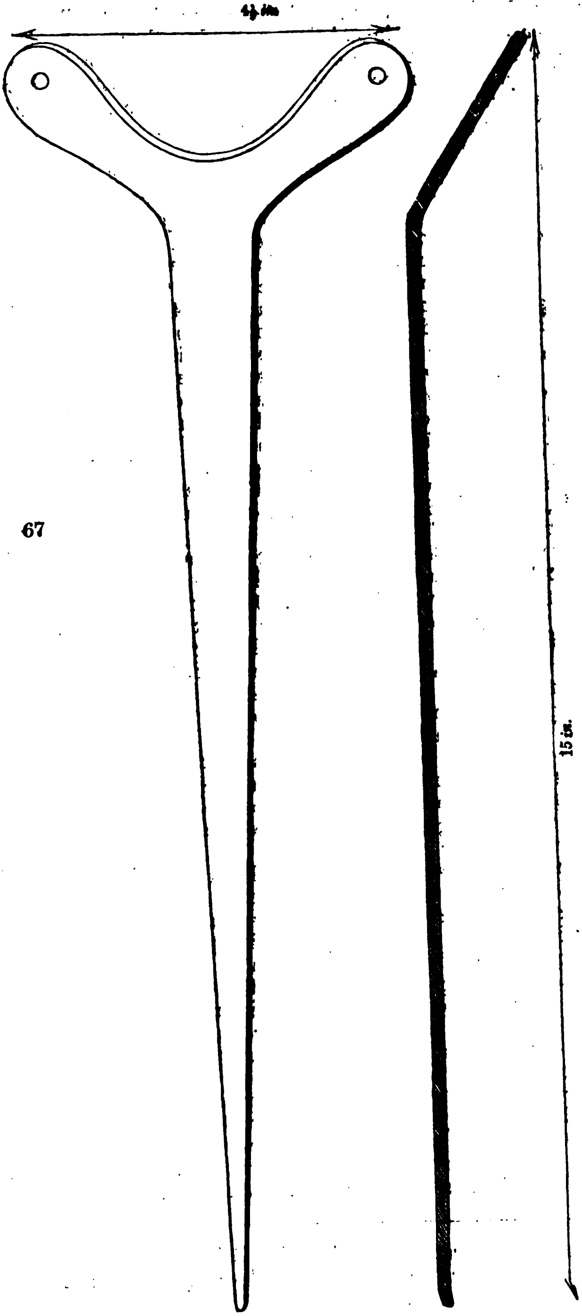

rarest trees by thousands, and send the young plants to all parts of the empire to his customers, in an infant state, when they occupy little space, and can be conveyed at little expense. They will be reared in local nurseries till they attain the height of a few feet, and the public will purchase them when they see the beauty of the foliage of some, of the flowers of others, and the great variety and number of species of articles of which they have hitherto been accustomed to see only one or two.

In the course of the summer Mr. Donald will no doubt find that he can procure a number of additional species; and we have recommended him, as we would all others in similar circumstances, to apply to the Horticultural Society, to Kew, and to the other botanic gardens, for cuttings of the young shoots, at the time when it is beginning to ripen, and the sap of course beginning to return and deposit the new wood. There is scarcely any ligneous plant, indigenous or exotic, cuttings of which taken off in this state, cut across immediately below a joint or bud, and firmly planted in pure sand, with all the leaves on, and covered with a bell-glass, which will not strike root. Let none, therefore, who have a good gardener about them, excuse themselves from planting an arboretum because they cannot get plants; for all who can prove that they can make a good use of them may procure cuttings from the sources mentioned.

Albury, Henry Drummond, Esq. — *April* 6. The house is beautifully situated in a valley, with undulating hilly sides, crowned with aged oaks, chestnuts, beeches, and pines; and in the bottom of the valley there is a considerable stream of pure water.

Albury has been celebrated since Evelyn's time, on account of its terrace, fruit-wall, and kitchen-garden, which have been noticed by our correspondent Mr. Gale*, in Vol. V. p. 10. Albury is, doubtless, a most delightful summer residence; but, as far as art is concerned, it is full of faults. The approach wants dignity of character, and goes up and down, over hills and hollows, like a common farm road. The lawn in front of the house is crowded and confused with masses of trees and shrubs; there is no leading feature; no breadth of lawn to form a centre to the picture, and a place of attraction and repose for the eye; and, as at Arundel Castle, there is no main walk inviting from the house to the grounds. How a place where nature has done so much, and where there is a good house, and no want of wealth and liberality on the part of the proprietor, should be so deficient in these three grand leading features of a park and pleasure-grounds, we cannot well divine.

When the grounds were planted originally in Evelyn's time, and recently during the occupancy of a former proprietor, no expense seems to have been spared in procuring the most suitable trees and shrubs; and these have thriven as well as the most sanguine planter could desire. The old terrace-walk and fruit-wall are, no doubt, interesting objects; no one would think of pulling them down now that they are there; but, if they were not there, no one would think of building them. So long a straight wall, and so broad a straight terrace, are great and striking deformities, with reference to the natural form of the surface on which they are placed; and this natural character is so strongly impressed, that it is not to be overcome by any art. In Evelyn's time, however, a place was valued much more for the art which it displayed than for its natural beauties; all the surrounding country was then in a state of nature, and we can conceive how much this formidable work of art must have been admired. The reason is, man can see no great beauty in either nature or art that has not reference to himself. When all the country is in a wild state, he sees the operations of mind in formal works characterised by straight lines and geometrical shapes; in short, in destroying the features of nature: when all the country is, as at present, laid out in straight lines, in roads and hedges, he recognises refined mind in the imitations of natural features exemplified in our parks and pleasure-grounds. Art is as much concerned in the one case as in the other; the difference in the effect aimed at is merely the result of a different degree of civilisation.

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* In the communication alluded to, Mr. Gale offered to supply further *notes on gardens which he has visited; and we regret he has not complied with our invitation to do so.*

The house at Albury is a plain unpretending building, in the Grecian style; the floors of the principal rooms are of abele, and they are furnished with abundance of books. Some additional rooms have lately been added in a Gothic tower, in the manner recommended by Gilbert Laing Meason. We have no objection to this sort of addition; but we should have preferred more of the Italian school of the middle ages in the tower, thinking the style would have harmonised better with the plainness of the main body of the mansion. Something more in the style of Deepdene would have pleased us better. At the same time, we merely give this as our own taste: Mr. Drummond is right in following his.

Mr. Drummond, we were told, builds very comfortable cottages in different parts of his extensive property in this neighbourhood, adding land to them to the extent of half an acre or upwards, and seldom charging more than 3*l.* of rent. This is being more liberal than most people could afford to be; but it is a proof, if proof were wanting to any person who has heard the character of Mr. Drummond, of the great extent of his benevolence. It is not to be expected that such landlords should become general; but were only a part of Mr. Drummond's practice imitated by extensive landowners, very different, indeed, would be the comfort and happiness of the farmers and labourers, and the appearance of their farms and cottage gardens.

Sutton Place, near Ripley. — *April* 6. The house is said to have been built by the brewer of Henry VIII.; and it is remarkable for the jambs and lintels of the doors, the mullions and tracery of the windows, and, indeed, all that is usually in stone about a Gothic house of that era, being formed of a sort of brick or baked earth. There is also a garden-house in which this material has been used in framing the door; and we had thus an opportunity of minutely inspecting it, and finding it to have been kiln-burnt in the same manner as brick. The gardens and grounds are utterly neglected; the standard apple trees are bending under a load of white lichen, and the poplars and lime trees are eaten up with mistletoe. We endeavoured to procure a truncheon from a poplar tree with the mistletoe on it, in order to plant it in Mr. Donald's arboretum; and we should have succeeded, if we had had leisure to direct the search for such a truncheon, instead of leaving that to another. Near the house is a very old mulberry tree, which must have fallen down on one side above a century ago, as the branches from the prostrate trunk have all the appearance of old trees.

Young's Nursery, Milford, near Godalming. — *April* 7. A small local nursery cannot be supposed to offer much interest; nevertheless, the grounds here were well stocked. Mr. Young's cottage and seed-shop is very pleasantly situated, and near it are some beds of herbaceous plants containing a few good species. In the pits were camellias, and a number of half-hardy articles, with some good auriculas. Considering the season of the year, the grounds were more free from weeds than some London nurseries which we could name.

Stroud House, the Misses Perry. — *April* 7. The order and neatness of the grounds about the house were, as usual, perfect; and the primroses, violets, wood anemones, barren strawberry, and Ficària ranunculöìdes, in the copse, most beautiful. We saw the little manufactory of Epinal hats conducted in the house of Miss Perry's gardener; the mode of manufacture having been discovered by Miss E. Perry, a lady of great ingenuity and worth. Two descriptions of clothes-pegs were here pointed out to us, the invention of a poor man in the neighbourhood, and improved upon by Mr. Perry of Godalming, architect, which are manufactured at Haslemere, and may be had through Mr. Charlwood of London. (See p. 370.)

Syon Gardens, Brentford.—April 9. Looked over the botanic range of hothouses, with a view to reporting on them at an early period, agreeably to the Duke of Northumberland's permission, and found the plants in the most vigorous state of growth. The range in the kitchen-garden is truly an admirable object both without and within. A number of new forcing-pits have lately been erected, and heated with hot water, by Walker, Kewley, Cottam, and Bailey, with a view of exemplifying the modes of those different engineers. The crops of grapes, peaches, figs, cucumbers, and strawberries, in the houses, are most abundant; and the whole garden is a model of order, neatness, and the very highest keeping.

Groom's Florists' Garden, Walworth.—April 12. The show of early tulips here is remarkably good in this as in most seasons, which we notice in order strongly to recommend these tulips to the cultivators of small gardens about town, to plant in patches along with hyacinths in their borders. A few of these tulips are introduced in the garden of the Zoological Society, but not a tenth either of them or of hyacinths which there ought to be. Mr. Groom has about twenty-five sorts of early single tulips, the same number of early double tulips, both showy, and, though despised by florists, well adapted for borders, being at once cheap and of the easiest culture. The cultivators of gardens about London and other large towns do not pay half so much attention to furnishing their gardens with early-flowering plants as they ought to do. During June, July, and August, nobody, not even the owner, cares much for a town garden, because there are the Bedford conservatories, the public nurseries, and the parks, to take enjoyment in; but during February, March, April, May, September, October, and November, a few flowers close to our windows or doors are valuable. Let all, therefore, who have plots of garden ground, however small, in the suburbs of towns and cities, insist on the gardener whom they employ planting them for these months. If the gardener says there are few things which flower in these months, refer him to Groom, or any other nursery or seedsman, for early tulips, hyacinths, or other bulbs; and to Mr. Cree's *Catalogue* (reviewed Vol. VI. p. 87.) for all the particulars as to time of flowering, colour of the flower, height, soil, &c., of herbaceous plants. If, after this, the gardener says, "This is all very well, but where am I to find the plants?" then tell him that he can get them *all* from Mr. Cree, or from the Epsom Nursery. We are obliged to be thus particular, in consequence of complaints which we are frequently having made to us, that the plants we recommend cannot be had in the nurseries. It will hardly be credited by a London nurseryman that we have had letters from distant parts of the country, stating that certain wistarias, magnolias, caprifoliums, roses, &c., which we have repeatedly recommended, were written for to different country and London nurserymen, and answers returned that they could not be had. Yet such is the case; and we know not what to attribute it to, unless it be to the ignorance of the trade as to the changes which take place in the names of the plants now in the country. We are surprised that people should be so indifferent in a matter in which their own interest is so intimately concerned. All recent changes of names may be seen in Cree's *Catalogue*, in Sweet's *Hórtus Británnicus*, or in our own.

Mr. Groom is now propagating a new variety of early pea, the seeds of which are of a deep green; and, when he has raised enough to offer it for sale, it will certainly be a most valuable addition to our culinary legumes.

The Camberwell Nursery, Messrs. Buchanan and Oldroyd.—April 14. We mentioned last year (Vol. VI. p. 378.) that an arboretum was commenced here, and also a collection of herbaceous plants. We are most happy to state that Mr. Buchanan, jun., by extraordinary exertions during last autumn and winter, has collected together upwards of 600 species and varieties of trees, and more than 1200 species and varieties of shrubs. These he is now arranging on both sides of a winding walk, on borders 8 ft. broad, and which, when united, form a length of 3200 ft. The shrubs are placed in three rows in front, and ranged into three classes according to their heights: the trees form one row behind the shrubs. Both trees and shrubs are arranged alphabetically. The average distance between the trees is 3 ft.; but, not being crowded on either side, the extension of their branches will not be interrupted in two directions, though it will in the direction of the line. Though the shrubs are planted in three rows, yet each genus is kept by itself; the tallest of the species being planted in the row farthest from the walk, the shortest next the walk, and the intermediate sizes in the line between. When all the shrubby species of a genus are tall, they are placed in the third row; and when they are all short, in the first row; and the sizes are so distributed that the three rows are tolerably equally filled. For example, all the helianthemums are planted in the front row, and they, of course, extend so far along that row as to allow of several genera being introduced in the two rows behind them. Much room is thus saved (which, in a nursery so near London, is an important object), and the alphabetical order still preserved. Each tree and shrub will be named according to the nomenclature of our *Hórt. Brit.*, and on every tally, preceding the name, there will be a number. These numbers being all in regular series, should any tallies be taken out and transposed, they are easily replaced in correct order. As additions are made, the number of the species immediately preceding is put on the tally, with the addition of the letters of the alphabet in regular series, as exemplified in our supplement to the *Hórtus Británnicus*.

Messrs. Buchanan and Oldroyd are collecting herbaceous plants, and intend planting them according to the natural system, in the interstices between the trees and shrubs. The idea of arranging them according to the natural system is very judicious, because it will prevent the interference of two alphabets. To keep the herbaceous plants still further distinct, the colour of their tallies might be black or green, while those of the trees and shrubs might be grey, cream colour, or brown.

On the whole, we heartily recommend the exertions of Messrs. Buchanan and Oldroyd as an example to the trade, and the Camberwell Nursery to gardeners and their employers as deserving every encouragement. We wish we could see all the other London nurserymen doing the same thing. Great, we are sure, would be the addition to the enjoyments of those about London who are fond of trees and shrubs; and very great would be the influence of such collections in increasing the knowledge and taste of the public in botany and gardening. The example of the London nurseries would soon be followed by the leading provincial ones; and, indeed, we have been told that Messrs. Miller and Co. of Bristol, and Mr. Hooker of Brenchley in Kent, have already made a commencement. Mr. Cree has all the trees necessary; but he has not yet brought them all together and arranged them. We trust he will soon do so.

New Cross Nursery, Messrs. Cormack, Son, and Sinclair; and the Bedford Conservatories. — April 14. Our object in calling at New Cross was chiefly to examine the grass ground, which was in excellent order; every patch being complete and in a thriving state. A great quantity of showy plants is constantly brought forward here, and sent to the establishment of this firm in Covent Garden Market, which we have called at from time to time in the course of the winter, and found gay and interesting to such an extent that we have not the least doubt but it, together with the establishment there of Messrs. Hockley and Bunney, will create, spread, and greatly improve a taste for plants. In heating these conservatories by hot water, the common error was made of having much too small a surface of pipe; an error which need not in future be fallen into by engineers who will take the trouble to study the abstract of Mr. Tredgold's paper given in our preceding Number. (p. 177.) The correction of this error is now making by Mr. Collings, one of the most ingenious hot water engineers that we have met with. We doubt even now, however, of there being a sufficiency of pipe for raising an adequate temperature during an open air temperature of zero, with a brisk east or west wind. We shall see. The experience of a few winters with these conservatories will afford some useful facts on the subject of heating hot-houses.

The two nurserymen who occupy the Bedford Conservatories must at present, and for some time, carry on business at a loss to all parties concerned; but we have doubt that they will ultimately be gainers. In the mean time, every Londoner who wishes to obtain some knowledge of the plants which constitute the metropolitan monthly flora ought to make frequent visits to the Bedford Conservatories.

ART. II. *Domestic Economy.*

To preserve Fruit. — Fruits of all sorts may be dried and kept a year or two, without losing their flavour, by wiping them dry, and putting them into a cool brick oven; and occasionally, while drying, grating a little sugar over them. *E. T. Birmingham, Jan.*, 1831.

Another Mode. — Dry them, and pack them in a jar with common salt, putting a layer of salt an inch or two thick over them, and preserving the jar from moisture. This process is adopted in Ireland for preserving cauliflowers, kidneybeans, and other delicate vegetables, from the period when they are in season till they come again, and this it does most completely. — *B. Dublin, March*, 1831.

Method of keeping a Winter Stock of Apples. — After having the apples carefully gathered, in a perfectly dry state (our man seldom begins before twelve o'clock, and terminates his gathering for the day about four), they are laid in heaps on the floor, and in about three weeks they are wiped with a dry cloth, and every one with the least appearance of speck or bruise laid aside for immediate use. They are then packed in boxes, thickly lined with thoroughly dried fern, so as not to touch each other, putting a layer of fern and a layer of apples, till the chests are so full as to allow of a good thickness of fern at the top. They ought to be again examined after Christmas, and again about March or the beginning of April. The out-building, where we keep them, you will imagine to be very cold, but not at all damp, when I describe it as having merely a tiled roof, without ceiling, and two windows with fly wire, without glass, and no ceiling to the room underneath, the door of which is almost constantly open. Indeed, our greatest difficulty is the securing them from frost, which we can scarcely effect by covering the chests with mats, old carpets, or any thing of that kind; but I should think their being well covered and surrounded with straw would answer the purpose. After a severe frost, the apples ought to be examined. The first inducement to keep them in chests was the building being so infested with mice; and the reason for adopting the use of fern, that straw sometimes became mouldy, and imparted a musty sort of flavour to the apples. Our apples are not gathered till perfectly ripe. It would almost appear that a cold place kept them more firm than a warm one; as frequently, after being brought into the house for some time, they have assumed a rather shrivelled appearance; but I should think a *finely grown* well-sunned apple would rarely shrivel. That sort of apple (the Young's pearmain) you saw when with us, we have kept nearly through May, when our stock has been sufficiently large to enable us to do so. Yours, &c. — *E. P. Stroud, April* 12. 1831.

To boil Potatoes. — I observe that you have in hand an *Encyclopædia of Cottage Economy*, and that you wish for suggestions on some of the subjects to be treated of in it. Since I came to Scotland I could not help noticing how much better they boil potatoes here than I used to get them done in London; and as this is a matter of some importance to cottagers, it may, perhaps, not be amiss to state to you the method practised here, viz.: — Wash the earth off the potatoes, and scrape or pare the skins off; which last should be done as thin as possible, not only from motives of economy, but also because the outside of the potato is always the best. Then let them stand covered with, and soaking in, water an hour and a half or two hours; wash them well out of this water; put a handful of salt with them in the pan they are to be boiled in, covering, of course, with cold water, and boil *quickly*, the quicker the better. — *A. W. Crosslee Cottage, near Glasgow, Aug.* 9. 1830.

Rheumatism. — Another thing I may mention is, that the poor people hereabout apply heated rhubarb leaves to parts affected with rheumatism. They say it eases the pain. — *Id.*

Cooperation for cheap Food, Lodging, and Education. — Sir, When I saw in Vol. V. p. 387. the object of cooperative societies, I observed that you expressed a wish that a fair trial of them should be made. As I lived at that time in the village of Ilmington, which contains above a thousand inhabitants, I thought something might be done for the good of all, in respect to dealing for food, &c. I gave notice of my intention to my neighbours; and, on the 2d of June last, a few of us met, and laid down each a small sum on the occasion; and we have since met once a month to pay in our weekly subscriptions. There are no less than six retail shops in the above village, and these vend their goods at a very dear rate; as you will believe when I tell you that, when we, the cooperators, began to sell salt at a farthing a pound, and at this rate got a good profit, the above retail shopkeepers sold it at 1*d.* a pound; good old cheese, which we could sell at 5*d.*, these shops sold at 9*d.*; and all other things in like manner. My wife sold the goods for the Society while we lived at Ilmington, bestowing her attention gratuitously; but, as we now inhabit a genteel comfortable house, which my employer has provided, close to the garden, and are a mile and a half from the Cooperative Society, my wife cannot, of course, bestow this attention any longer. But, although I am now at this distance from the Society, I attend at the meeting every month, and pay my little sum to it in common with its several subscribers. Notwithstanding the advantages above enumerated, the minds of men (as observed in Vol. VI. p. 481.) are so various, that it seems impossible to keep them together long enough to do much good; for, unless they can perceive some most unreasonable advantage arising from their union, there is nothing but jealousy and dissatisfaction amongst them. In spite, however, of this propensity in men, the time has arrived, at least in this place, in which the poor man has something, small as it may be, that he can call his own. A great deal, indeed, for the advantage of the labourers might be done, if all who employed them were to employ them as I do, on task-work, putting them out their work at a fair price. — *W. B. Rose. Foxcote, Worcestershire, Nov.* 28. 1830.

Improved Clothes Pegs. (*figs.* 68, 69, and 70.) — Sir, As, when last you did us the pleasure of a visit, transient as it was, you wished us to send you a sketch of the clothes pegs, on what we believe to be a construction not generally known, for your *Register of Rural and Domestic Improvement*, we take an early opportunity of complying with your request. They were originally invented, I believe, several years back, by an ingenious carpenter of Haslemere. He has been for some

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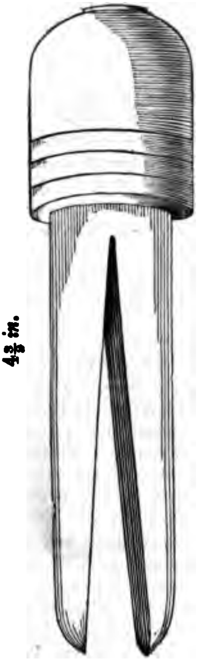

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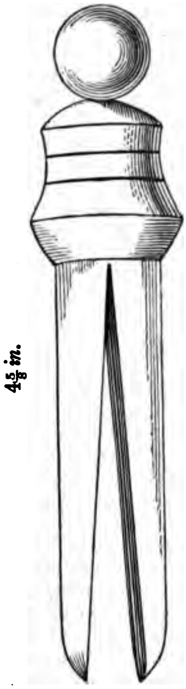

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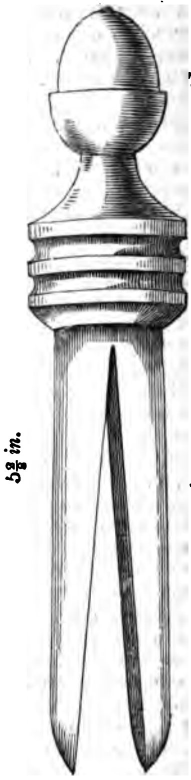

years dead; but a young man who worked for him when alive, who has partly succeeded to his business, and with it has inherited much of his ingenuity, was the maker of those you saw, and from which the sketches are taken. A more civil, honest, and industrious young man than Charles Stenning can hardly be met with any where; and as such I hope he will meet with patronage, particularly in an article so really useful, and so superior in every respect to the kind generally made. With these pegs, it will readily be perceived, there is no chance of tearing or soiling the clothes, as might happen with the common sort bound with tin; and I need only say that some have been in use seventeen years, to convince any one accustomed to using the others, of the much greater durability of those made by Charles Stenning. In fact, they are not continually splintering, as every housewife will say of the common kind; and the much longer time they will last would alone make amends for their being a little more expensive at the beginning, if they had not the additional recommendation of a much neater and cleanlier appearance, and, if a laundry-maid may be allowed some share of delicacy, that they will never tear her hands.

I will only trespass farther on your patience to add that the first peg (*fig.* 68.) is of the original pattern; the others (69. and 70.) being turned from sketches made by a gentleman, under the idea that a little alteration in shape could not affect their utility, whilst it might add to the improvement of their appearance. — *C. P. Surrey, April* 9. 1831.

These pegs may be had of Mr. Charlwood, 14. Tavistock Row, Covent Garden, with or without peg baskets. The pegs are from 1*s.* to 1*s.* 3*d.* a dozen, and the baskets 2*s.* each.

Thorn Skewers. — Sir, In your last Number (p. 232.), under the head of *Arborètum Británnicum,* you have thought well to insert a rather hasty and rambling letter of mine, which was written, I assure you, without the least idea of its ever appearing in print, but merely with a view to throw out some useful hints for your private information. Had I been aware that you meant to insert it in your Magazine, I would have endeavoured to put the substance of it in a somewhat more methodical form, so as to render it less unfit to meet the public eye. I do not, however, complain of what you have done, especially as the letter in question has been the means of introducing to public notice the thorn skewers (see fig. 35.), which I am much pleased to find are so highly approved of by yourself, and others to whom you have shown them. I am only surprised that they were not known to you before; they have been in use in this house before I was born, and I am informed are employed in the north (Cumberland) for the purpose of dividing hog-puddings into links, instead of tying them with a string, as is usually done here. For the benefit of cookery, I hope these thorns will henceforth become a regular article for sale in the London shops. My principal object in again adverting to the subject is to state that, in gathering the thorns from the hedge, care should be taken to select such as are strong and clean; i. e. as free as may be from knots and side shoots, and more especially from the small lateral thorns with which the primary thorn or skewer is frequently armed. It may not be unimportant to add that, if the thorns are boiled in water for a few minutes before they are scraped, the bark will peel off with much greater facility, and the operation may then be performed almost with the thumb and finger only, without the help of the knife. The boiling somewhat alters, I think I may say improves, the colour of the skewers, giving them a slightly cream-coloured tinge; whereas when scraped raw, without being submitted to the process of boiling, they usually assume, while fresh at least, more or less of a greenish hue; as you may perceive by the specimens prepared after such method, which I send herewith. The colour, however, makes no difference in the utility, but merely in the appearance, of the skewers. After the thorns are scraped and freed from the bark and knots, if a little sand or glass paper be employed in polishing them up, the superior neatness which is hereby given to the article will amply repay the additional labour.

The watchmaker's skewer, made of the wood of *V*ibúrnum *O'*pulus, of which you have given a specimen at p. 234. fig. 34., it should be observed, is figured in the rough. It is almost needless to add that the point should be sharpened, and its bulk considerably diminished, in order to fit the minute pivot-holes in the works of a watch, before it is fit for the use of the manufacturer. Yours, &c. — *W. T. Bree. Allesley Rectory, April* 5. 1831.

ART. III. *The Arborètum Británnicum.*

SIR, It is with pleasure that I see announced in Vol. VI. p. 718. the notice of your coming *Arborètum Británnicum,* a work which appears calculated to be eminently useful, as well as interesting, in many respects: and the mode you have taken to elicit materials from all quarters is both liberal and candid, and, as it appears to me, calculated to be crowned with success. I am much gratified to see, by your third paragraph, that it is intended to "include the distribution of the trees in different countries, native habitation as to soil and subsoil, and rocks." I have before ventured to trouble you with my sentiments on the great importance of developing and presenting to public observation the affinity which certain species of vegetables have to particular strata of the earth, so as to connect the botanical with the geological character of a country. Your intended work now offers a most happy opportunity of commencing the publication of a series of observations on the subject, necessarily so much neglected hitherto, because the science of geology itself is but of yesterday, of later time than the days of Gerarde, of Ray, of Hudson, of Solander, and of the immortal Linnæus. Yet, in respect to our native plants, the eye of William Smith, for more than thirty years, has not been blind; so long since is it that he would tell you, by catching the outline of the foliage between his eye and the sky in a starlight night, what stratum he is passing over, not less certainly than by the outline of the banks and hills, or by the sound of his horse's footfall. Yet the long life of the acute and indefatigable Richardson has not been spent in vain: as communicative as he is observant, his treasured stores on this topic would infinitely enrich your work. If you ramble westward, fail not to seek out the aforesaid venerable minister of Hungerford, and to lay him under copious contributions. In respect to foreign botany, Humboldt has many detached pieces of information on this head; we must also feel infinitely obliged both to yourself for having (Vol. IV. p. 463.) a little varied Mr. A. Gordon's valuable observations on the habitats of American plants, and also to Mr. Gordon for his paper (in a subsequent Number, Vol. VI. p. 359.) restoring the text of his own original observations; inasmuch as that collision has given us a very valuable elucidation of the native positions of so many beautiful plants of that country. I have, even in my humble collection, seen cause to change the habitation of at least half a dozen Americans, in consequence of Mr. Gordon's obliging information. In very numerous books of travels, we pick up detached observations, indicating the relation of plants to particular strata, which, if sought out and collected, would together constitute a valuable and copious, though not complete, body of information on this head. You have now the opportunity of making a very happy beginning, by restricting the first enquiry to trees and shrubs only, of which the genera and species are comparatively few. Even in this, I grant, you may not be perfect in respect to all the foreign genera and species; but in this day, when there are so many planters that write, and writers that plant, I shall think it hard if you cannot collect competent and sufficiently accurate information respecting the connection between our indigenous trees and shrubs, and the strata which most genially produce them. This will most easily and effectually be attained by inviting the contributions of numerous individuals; and the botanical world must feel obliged to a gentleman who, in your *Magazine of Natural History*, Vol. III. p. 410., has made almost the first essay yet extant, towards this end, by identifying the plants he recognised on different sites of the mountain limestone. That writer has very happily and naturally hit off one of the most interesting circumstances attendant on this species of knowledge; namely, that he who possesses it, go where he will, recognises old acquaintances, and finds a home in every country. In the trees so aptly and beautifully denominated by the benevolent St. Pierre the " friends of man, " in the trees of the stratum on which he played and wandered when a child, he hails the very shade which sheltered him in his native village, and finds a new feature of interest in scenes far distant from his accustomed habitation. This gentleman, however, has fallen into some few errors, in setting down, as peculiar to the mountain limestone, plants which are common to other calcareous soils alike as to that; and shows that his observations of the strata have not yet been very extensive. We are, however, thankful to him for breaking the ice, and setting us a good example in recording divers facts which are correct; let us receive these with gratitude, and call on some others who have travelled more widely, and had their eyes longer open, to supply what in his statement is deficient, and rectify what is erroneous. But in the first place press into the service your neighbour, Mr. Bicheno, who has been for years meditating to write on this very subject; and, if he will write one tenth part as well on this topic as he has written on Ireland, his essay will be a most valuable one. And now let him slumber no longer. All vegetables shall combine to arouse him. May all the thorns and prickles and spines and points of *Cáctus*, and *Cárduus*, and *Cnìcus*, and *Cratæ`gus*, and Cow-itch, and whatever else is most pungent, fix themselves in him, and make him wince, and toss, and twist, till no three angles in his huge homologous sides continue equal to two right angles; unless he do, " omitting," as the king says, " all other business, before the feast of St. Martin the Bishop, in winter now next," shake the anthers of his pericranium over divers sheets of white paper (in the manner recommended by Mr. James Craig for vines, in Vol. VI. p. 687., or in any other effective manner), until he have impregnated the great globular black pistils of your printer's devils with a full crop of information upon the subject. He would be a host, who would leave little for any other more puny ally to effect. But, as I think you evince sound judgment in asking for as many portraits of each tree as correspondents will send you, that from many concurrent testimonies to its lineaments you may more spiritedly and truly hit off its real graphic characters, so I think you may not act unwisely if you seek to multiply testimonies to the geological elections of each tree and shrub, from comparing which testimonies, and weighing their discrepancies, you may more accurately attain the true geological character of each plant. Should you express yourself to be of this opinion [We are and shall be much obliged by our correspondent's cooperation.], I may venture myself to trouble you with some imperfect observations on the subject; not desiring to pass them as oracular, but inviting every degree of doubt and discussion, as knowing how frequently I take up an impression too hastily. But, above all men living, I counsel you to suck the brains of the amiable kind-hearted William Smith, who never can refrain from telling to a fellow-creature every thing which he knows himself and which the other wishes to know; nor, if even he had wished to refrain, could he ever have acquired selfishness enough to be able to do it. Though he has again and again seen all his discoveries appropriated by others who had not a tenth part of his observation, yet never will his childlike simplicity, and eager love of science and of all who love science, suffer him to bury a remark in his own bosom longer than he finds a human creature to impart it to. Alas! that such talent and such benevolence should *in hâc fæce Romuli* be its own reward; and that blockheads should batten on the science which he first taught the way to investigate!

It is not easily to be conceived how important this knowledge is to the planter. Nothing is more common than to observe seats, and parks, and villas, on which immense sums have been expended in architecture, and perhaps no less money in planting, but which nevertheless bear such a stunted, starved, miserable vesture of trees and shrubs, that they look mean, beggarly, comfortless, and altogether unattractive. I will venture to say that, in almost all cases, this failure is enhanced, and is very frequently occasioned, by the omission to select plants congenial to the stratum; and that there is no soil in this island, however unpromising, unless perhaps some of the lightest and most spongy peat moss, or absolutely solid and naked rock (and perhaps not even those), which may not be covered with a healthy and vigorous growth of some species of wood, either trees or shrubs, by means of a judicious selection, adapted to the strata: so that those who are doomed by their possessions to inhabit an ungenial soil may solace the rigours of their abode by calling together their indigenous friends around them; always understanding that, in this case, it is the election of the trees for the soil, and not the owner's partiality to the trees, that is to be the guide. But a vigorous healthy tree or shrub of a more homely species is, in my eye, infinitely to be preferred in a landscape to a pining, sickly, starveling and diseased plant of a more *recherché*, beautiful, and interesting kind; and the art of making a proper choice for securing this desired effect is a grand result of the science which this third department of your *Arborètum Británnicum* will teach, if you will carefully investigate and publish the habitats of the several species with reference not only to the incidental circumstances of cultivation or other fortuitous influences, but to its chemical and geological elections. I am, Sir, &c.— *Causidicus. Dec.* 8. 1830.

Soil and Site for the Larch, Rot of the Larch, &c. — The rot in the larch has been found to prevail in so many instances as to render it difficult to account for the cause. It has been found to prevail on rich deep soils and on poor shallow soils, on retentive and on porous subsoils, on soils incumbent on freestone, limestone, and whin or green stone; and also, on all these descriptions of soil and subsoil, the larch has been found tolerably free from this hidden disease. This being the case, we are led to suppose that the rot in larch takes its rise from something accidental, rather than from any natural property in the soil. It has been a common practice to follow a crop of Scots pine with this more lofty and promising plant; and the writer of this has recently discovered, in numerous instances, that where this has taken place the rot uniformly commences in fearfully numerous individual instances. This effect is produced as soon as seven or eight years after planting; while plantations of the same plant, on the same estate, planted at the same period, and in every respect similarly circumstanced to the other, with the important exception that they did not follow the Scots pine, continue entirely free from the rot. In old plantations, too, where the Scots pine and larch had been mixed together, and where the disease was by no means prevalent, the new crop of larch is completely affected; giving room to infer that the rotting roots of the *P*ìnus sylvéstris, or Scots pine, form at least one powerful agent in promoting this disease Where, in such young plantations, the larches are not used merely as nurses, they should be made to serve in that capacity to suitable hardwooded plants, without loss of time. I am, Sir, yours, &c. — *Archibald Gorrie. Annat Gardens, Feb.* 10. 1831.

Drawings procured of full-grown Trees would add much to the interest of your *Arborètum Británnicum*, particularly exotics or foreigners from every district in Scotland, England, and Ireland, in place of being confined to the vicinity of London; accompanied by a description of the soil, subsoil, latitude, and elevation at which they grow, to be all drawn to a scale. This would form a tangible sort of guide to all foresters and proprietors who wished to beautify their estates or improve their forests by the introduction of foreign species. It would show how far they might proceed with safety under similar circumstances, and furnish data which have not hitherto existed, by which the beauty and value of plantations might be estimated in any part of the British Isles; native and naturalised species might also be included. One thing I know, had such a book existed about a twelvemonth ago, it would have saved me the honour of an extensive correspondence with Professor Leslie on that subject last winter; and I have known many in a similar ignorant plight. On the estate where I reside, the surface is much diversified, and altitude and exposure make a striking difference in the size and apparent habits of native trees thereon. — *G. Perthshire, Feb.* 1831.

Varieties of British Trees. —When I was at Chatsworth, on the 20th of October, 1830, I observed a variety of the common British oak, the leaves of which were of the most beautiful dark green colour, without the least appearance of decay, while those of every other tree of the same species were brown, or had fallen off. This tree stands in an open situation in front of the mansion: and, according to the information which I received from the gardener of Mr. Paxton, it retains its leaves through the greater part of the winter; and afterwards, in a decayed state, till replaced by new ones in spring. Duhamel observes, so liable is the oak to mutability, that scarcely two trees exactly alike are to be found in a wood; and Mr. Cobbett, in his *Woodlands*, has the same remark: but, though I agree in the justice of this observation, I nevertheless consider the variety highly deserving of the attention of arboriculturists.

There are some weeping lime trees in the neighbourhood of this oak tree; they are graceful, and by no means of common occurrence.

I have often wondered that the weeping beech, decidedly the most elegant tree of British growth, not excepting the birch, is not more frequently noticed by writers on ornamental planting. I observed some fine specimens of it in Tweeddale, in Scotland; but the finest with which I am acquainted are those in the park of John Corry Moutray, of the county Tyrone, Ireland. Their trunks are upwards of 10 ft. in circumference; and the branches, which extend 50 ft. from the stem, touch the ground.

There is a fine weeping white thorn in the garden which belonged to the residence of the Regent Murray in Scotland: it is a very beautiful tree. I observed, in the following places, trees or shrubs which have not been described:—Liverpool Botanic Garden; Mr. Skirving's nursery at Walton, Liverpool; Messrs. Dickson and Turnbull's nursery, Perth; Dickson and Co's nursery, Edinburgh. [We should be glad to have the names and dried specimens of these trees, with such information, historical and descriptive, as the parties possessing them can furnish.]

I may mention that the *C*èdrus *Deodàra*, at Hopetoun House, is thriving amazingly; it increased 15 in. in length last season. It stands, you are aware, in the open air. The son of Mr. Smith the gardener, observing an account in your Magazine of some experiments on grafting the genus *P*ìnus, copied them, and has been very successful, not only in propagating this genus, but many others of the *A*biétinæ.—*E. Murphy. December*, 1830.

The Lime Tree is preeminently suited for the manufacture of butter casks, because it is the only British wood free from the pyroligneous acid: this was proved by innumerable experiments by Mr. Geo. Moir, salt manufacturer, Edinburgh, and communicated by him to the Highland Society. (*Highland Soc. Trans.*, vol. vii. p. 355.)

U'*lex europæ'a* contains salt, which is the reason why horses and cattle fed on it soon get a clear skin. (*Aiton's Dairy Husbandry*, p. 39.)

Art. IV. *The Vegetable Representative System.*

The Vegetable Representative System.—We stated (p. 176.) that we should apply to Mr. Aiton of the Kew Botanic Garden for such greenhouse and hot-house plants as we could not procure from our friends about town. We did so, and the result has far exceded our expectation. Mr. Aiton supplied us with sixty-two rooted house plants, and cuttings of twelve species of house-plants, to illustrate seventy-four orders and tribes, and he promises more at a future time. He has also sent plants or seeds of forty-four species of grasses, to illustrate the various sections and tribes of the order *G*ramíneæ. We have the greatest pleasure in thus doing justice to his liberality.

From Messrs. Loddiges, Mr. Donald, Mr. Lowe, Mr. Knight, and Mr. Malcolm, we have been enabled to complete our representative Arboretum, and from Mr. Anderson of the Chelsea garden, Mr. Knight, Messrs. Loddiges, Mr. Cree, Mr. Maund of Bromsgrove, Mr. Pope of Handsworth near Birmingham, and, above all, from Messrs. Young of Epsom, we have nearly completed the Dicotyledonous division of our herbaceous representative system. The Monocotyledonous division consists chiefly of carexes, grasses, and bulbs; most of the bulbs were already in our possession; the grasses, as we have above mentioned, have been furnished by Mr. Aiton; and some of the carexes by the Misses Perry.

Of the garden Acotyledòneæ, those ferns and mosses which we had not got, were supplied by the Misses Perry of Stroud House.

We are still in want of plants to illustrate the following orders and tribes: viz.—

Hot-house Plants. *Vasculares:* Order 2, tribe 1; 17, tribes 1, 2, 3; 20, tribe 3; 30, tribe 6; 33; 34, tribes 1, 3, 4; 38, tribe 1; 40, suborder 1; 41, Hipp. spùriæ; 42; 46; 55, tribe 3; 56; 64; 65; 66, tribes 3, 7; 67, tribes 6, 7, 9; 71; 73; 74; 75; 81, tribe 1; 82; 86, tribe 1; 107; 132; 133; 159; 166; 169; 186; 198, 204, section 3. *Cellulares:* Order 1, tribe 5.

Green-house Plants. *Vasculares:* Order 2, tribe 2; 3, tribe 1; 5, tribe 2; 8; 16, tribe 2; 23; 30, tribe 3; 34, tribe 2; 36; 38, suborder 2; 55, sections 2, 4; 66, tribe 6; 76, tribe 6; 95; 98, subtribe 2 of tribe 1; 103, sections 4, 6; 104; 118; 131; 135; 144; 162; 168; 207; 210, suborder 4.

Hardy Herbaceous Plants. *Vasculares:* Order 10; 13, tribes 4, 5, 6, 8, 11, 13, 14, 15, 19, 20, 21; 47, subtribe 3 of tribe 3; 76, tribe 4; 77, tribe 1; 78; 81, tribe 2; 86, tribe 2; 88; 90, tribes 4, 5; 91, tribe 2; 108, tribe 7, suborder 2; 115, sections 2, 3; 146; 154; 172; 183, tribes 2, 7, 8; 188; 189; 192; 193; 199; 208. *Cellulares:* Order 1, tribes 3, 4; 4.

Our friends will find the names of the orders and tribes referring to these numbers at p. 157—175.

ART. V. *Retrospective Criticism.*

SPA Botanic Gardens.— Sir, I was surprised to find in your last Number (p. 220.) so gross a misrepresentation of the Southampton Botanic Garden, which is under my immediate charge. I am persuaded your numerous subscribers will at once perceive the base motive of the individual who took upon himself to decry and nickname a place so well known to botanists and amateurs. As I scorn the idea of puffing, I shall not enter into any detail at present, further than the extent of ground and glass. If you consider it of the slightest moment, I will undertake to transmit you an impartial description of Mr. Page's establishment, which I am proud to have the honour of conducting. Our ground in the town of Southampton, in the whole, is about 1 acre, and 764 ft. of glass; and our nursery, which is five minutes' walk from our own ground, contains 54 acres, and 100 ft. of glass. Yours, &c. — *James Ingram. Southampton Botanic Garden, April* 25. 1831.

We shall be most happy to receive the description offered. We were quite unaware of any misrepresentation in the article alluded to, relying on the writer's name as a guarantee for truth and good feeling. — *Cond.*

Mr. Fowler of Devonshire's Mode of heating by hot Water.— Sir, In your Magazine for August, 1829, you were pleased to notice a pamphlet I had published on the subject of a patent granted to me for circulating hot fluids for agricultural and various other purposes. The introductory remarks you have made did me the greatest honour; and I felt grateful, indeed, to you for them, as they were so much calculated to establish my original claim to the invention — an invention which originated entirely from contemplating the cause of circulation of hot water, as described in some of the earlier Numbers of the Magazine for 1827. At that time, many theories were existing as to the cause of this curious mode of conveying heat; but none appearing satisfactory to the gentry here in Torrington, I was asked if I could account for the cause of circulation. After some consideration, I saw that the levity of hot water, or rather the difference of density of hot and cold water, was the entire cause; and I thus satisfactorily explained it. Contemplating further on the expansion of fluids by heat, I conceived that the siphon would also *circulate* hot fluids on the same principle of density or condensation; and also that it would cause more rapid circulation, which appeared to be a great desideratum. I therefore caused two tin vessels to be made, and connected them near their bottoms with a straight tube. I tried the experiment with a siphon, first about 3 ft., then 10 ft., and afterwards 20 ft. above the surface of the water in the vessels; and I found that the circulation was more or less rapid in proportion to the elevation, and the means taken to increase or diminish the difference of temperature in the ascending and descending legs. One insuperable objection, however, which I then conceived would for ever operate against its utility (namely, the diminution of the boiling point of water in proportion to the elevation) caused me to suspend my operations for some time; but still meditating on those experiments, and occasionally trying the effect of my 20 ft. siphon, I found that a low temperature of the water would cause a difference of level between the two vessels of 1 in., 1½ in., and even 2 in., if the connecting tube were stopped; and thus a circulating current was evidently created with the force of this fall. I quickly saw that this property might, indeed, be usefully employed to circulate boiling fluids to almost any extent, and with great rapidity; and even if required, in open channels on the ground, by using one siphon only, to take up the fluid and give it a fresh impulse after it had again passed through one of a series of boilers. It was also evident that, by lengthening or extending the surface of the tube from this last boiler, the fluid might be suffered to cool so much as might be needful before it again ascended in the siphon, &c. &c. But as all this, and much more, is clearly described in my specification and pamphlet, I need not enlarge on it here; and shall only remark, that, after much experience and application, I am decidedly of opinion that the various modifications of which my plan is susceptible will, in general, ultimately supersede every other plan yet known, as I am well assured of its very superior powers and efficacy, united to perfect freedom from all danger in any case.

I certainly did not expect, in the article alluded to in your Magazine, that you could enter into all the details of my plan, or that a hasty opinion formed of it could be perfect; but what was there said was honestly said, and I feel in the highest degree grateful to you for it: its real merits, if any, must be left for the experience of posterity to decide on.

You may now easily conceive what my feelings were when I received a letter from you in the fall of 1830, saying that "Mr. Kewley had made great improvement in the siphon mode of heating, which would appear in the next Number of the Magazine." [See Vol. VI. p. 377.] When this Number appeared, I found that his improvement was the substituting a pump for the filling cock. Surely it cannot be said that a pump was never before employed to fill a tube, or that a pump is at all *essential* in the action of the machine patented to me. My specification says, "the invention consists in causing water, oil, or other fluids, to circulate through the medium of a bent tube by raising the temperature of the fluid at one end of the tube, so that it is always warmer than that at the other;" and I then proceed to show how that tube which I call a thermosiphon may be filled. I adopted what you call the cock system, in preference to the pump, as I knew the mode of filling with the cocks and air-plugs was perfect, and that cases could be proposed where the pump would fail to extract all the air, which, of consequence, would have had some tendency to vitiate the patent, had I adopted the pump in the specification. At any rate, one of the effectual modes of filling and refilling the tube, out of the many plans that might be devised, was sufficient for the purpose of the specification, and I adopted that which appeared to me to be the most perfect. Mr. Kewley's substitution of the pump is, therefore, a palpable infringement; and if you reperuse or recollect the article in the Magazine now alluded to, I am sure your feelings of justice will allow that I have much to complain of in that article.

In consequence of the great rapidity of circulation caused by the thermosiphon, I have been obliged to turn my mind to the construction of a new form of furnace and boiler; and I have at last succeeded, even beyond my expectations, with regard to effect and saving of fuel. One of those boilers is erected here, and two or three in Barnstaple; and I very much think that this furnace will be found the best for steam engines of any yet known, in which the fire is not urged on by artificial means. A beautiful model of it has been made for Earl Fortescue; and I intend to send you homely drawings (or rather sections) of it soon, which may be prepared for the Magazine should you think them worthy of your notice. I am, Sir, &c. — *Thomas Fowler. Torrington, Devonshire, April* 21. 1831.

Mr. Fowler appeals to our feelings of justice. We have turned to the passage to which he refers, and cannot find the slightest ground for an appeal of any kind. As to his patent, after the publications of the Marquis deChabannes, we cannot conceive what ground there can be for one, either to Mr. Fowler or to any body else. However, we do not pretend to understand the patent laws; all that we pretend to do is, to note improvements as they are brought before us, whoever may make them, and whether they are "patented" or not. We have acted in the case of Mr. Fowler and Mr. Kewley with perfect candour, and as we think we should do again under similar circumstances. The drawings and sections of the furnace we shall be happy to receive and publish. — *Cond.*

Erratum. — Sir, In my paper on Peach trees, p. 241., the word "decayed," in line 16., is one substituted by you for "plethoric," the latter being the word used by, Sir, yours, &c. — *John Pearson. Kinlet Gardens, April* 11. 1831.

Art. VI. *Queries and Answers.*

CHLORIDE of Lime. — Some time since, it was said that chloride of lime applied to plants produced very remarkable effects. Can you point out where any satisfactory information can be obtained on that subject; stating the time and quantity to be used, and the precautions to be attended to? — *B. Bevan. Leighton, Feb.* 7. 1831.

What is the Name of an Insect, or is it one, which dissects the Leaves of Pear Trees, leaving only the veins and the epidermis of the lower surface of the leaf, the insect preying on the upper surface of it? It has a kind of gelatinous appearance, and emits a disagreeable scent when crushed, which it is with a slight touch. It is nearly the colour of a leech, and is nearly of the shape and size of the figure. (*fig.* 71.) Was it produced from a small scale of a brown colour, and pointed at both ends, less than half the size of a seed of the common flax? Perhaps this, if published, may elicit the name of this pest, or produce an account of its metamorphosis. Now, should any one be annoyed with this thing, and wish to destroy it, I will give you an account of the method which I tried with success. As soon as the creatures made their appearance, I took an old pepper-box, and put some fresh slacked lime in it, and powdered them over with it, which was certain death to them. Then, for the scale, I took an old knife, and scraped it off the old shoots, anointing the shoots afterwards, but not the buds, thinly with train oil, and by that means got clear both of scales and insects. I am, Sir, &c. — *Wm. Hurst. Wandsworth Road, Feb.* 1831.

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The devourer of the leaves is the larva of one species of insect: the scale adhering to the bark of the branches, a certain state of another species; probably the egg state. That the two objects appertain to two perfectly distinct species is, I think, a point not to be doubted. The scale mentioned abounds in the north part of Cambridgeshire on the branchlets of old apple trees; and, in unlading the trees in autumn of their ruddy riches, here and there an apple occurs to whose rind one or more of these scales firmly adheres, and where it must have become fixed before the apple's growth was finished; as, when the scale is removed, a slight depression in the rind of the apple is perceptible.

Train oil is very effective in the destruction of insects, as my father informs me, he having experimentally applied it to many species occurring in his garden, and with speedy destruction to most of them. — *J. D. for Cond.*

Sand on the inner Surface of Glasses used in Propagating. — I have often observed, and am at a loss to account for, the lining of sand which sometimes coats the inside of the cap glasses with which the cuttings planted in the sand are covered. From the specific gravity of sand, we can scarcely suppose it to have been carried up by the evaporation from the pot. May it not be attributed to the agency of electricity? We exist in an ocean of electric fluid, ever subject to flux and reflux, from its antagonising properties; and that it is the great principle of vitality in animals and vegetables is generally admitted. Glass is an electric, vapour a non-electric or conductor of the electric fluid: may not the accumulation of this fluid near the glass account for the more vigorous growth of plants placed adjoining to it, and may not the growth of cuttings under cap-glasses be also promoted by the same cause? The enquiry is interesting, perhaps useful: the more perfect knowledge we can acquire of this mighty and mysterious agent of nature, the more applicable it will be found to the most important objects of horticulture. — *J. R. Kilkenny, March* 15. 1831.

A very beautiful, and perhaps rare, Variety of Lilac. — Among the lilacs now so splendid in the gardens about town, I do not see a variety or kind which exists in the botanic garden at Bury St. Edmund's; having been established there from plants bought about six years ago by Mr. N. S. Hodson, the spirited superintendent of that establishment, of a French itinerant vender of shrubs, bulbs, seeds, and also of what he termed vivacious plants. The plants of lilac purchased were about six in number; and had been budded on the common lilac at about eighteen inches from the ground. When the plants flowered, three of the six proved the Siberian lilac; but the remaining three showed themselves of a kind which, though more like the Siberian than like the common or the Persian, is obviously distinct from, and quite superior to, the Siberian. It has larger leaves, larger panicles of blossom, and these blossoms are of a fuller and far more rosy colour. In short, the difference is so striking, and the variety so superior, that visitors used to exclaim, as I do now, "What lilac is this?" — *J. D. Bayswater, April* 30. 1831.

Indigenous Erìcæ. — Sir, A correspondent in your Magazine (p. 246.) requests to be informed how many *E*rìcæ are natives of England. It was hardly worth while, I think, to ask such a question in print, since the information desired might have been as effectually, and much more speedily, obtained by applying to any botanist, or consulting almost any systematic work on British plants. The question having been put, however, I shall not hesitate to give the answer to it. Our British species of *E*rìcæ, then, are as follows: — *E*rìca (Callùna) vulgàris (*Eng. Bot.* pl. 1013.), *E. T*étralix (*Eng. Bot.* pl. 1014.), *E.* cinèrea (*Eng. Bot.* pl. 1015.), and *E.* vàgans (*Eng. Bot.* pl. 3.). To these have lately been added, *E.* ciliàris, discovered by Rev. J. S. Tozer in various places near Truro in Cornwall (see *Sup. to Eng. Bot.* pl. 2618); and, according to a more recent communication, in your Magazine (p. 108.), *E.* mediterrànea (*Bot. Mag.* pl. 471.), on the western coast of Ireland by Mr. Mackay. The above, I believe, complete the list of our native heaths, as far as the discoveries of botanists have yet extended. It may be mentioned, however, that Menzièsia Dabeòci* (*Eng. Bot.* pl. 35.) and M. cærùlea (*Eng. Bot.* pl. 2469.) have both been occasionally referred to the genus *E*rìca by different botanists: the former is a native of Ireland, and is still known by the name of the Irish heath; the latter has been more recently discovered in Scotland. *E*rìca (Callùna) vulgàris, *T*étralix, and cinèrea occur abundantly in numberless places throughout the country; and all three are occasionally found varying with white flowers. A very pretty double-flowered variety, too, of *E.* vulgàris, has long been cultivated in the gardens. *E.* vàgans, as its English name implies, is found in Cornwall; particularly near the Lizard, where I have seen it with deep red, pale, purplish, and white flowers. For descriptions of our British heaths, I refer your correspondent to the works already quoted.

The same gentleman records the fact of his observing, in a particular spot, *P*olýgala vulgàris, with flowers of four different colours, viz. dark blue, light blue, red, and white; and he asks, "Are these four different varieties ?" [species, I presume, he means,] "or are they all the same?" They are, doubtless, mere varieties of one and the same species, and all of them may frequently be found in places where the plant occurs. As to the cause of this change in colour, it is a mystery which we cannot explain, any more than we can the cause of the colour in any flower. Yours. — *W. T. Bree.* *Allesley Rectory, April* 5. 1831.

ART. VII. *Horticultural Society and Garden.*

MARCH 15. 1831. — *Read.* A paper on Pears; by T. A. Knight, Esq. President.

Distributed. Cuttings of Mr. Knight's Sweet Red Currant, and of the Green Gage Gooseberry, from T. A. Knight, Esq.

Exhibited. Camellias, from the Comte de Vandes, F.H.S. A drawing of the Lissochìlus speciòsus, from Mr. Gruggens, Kingsham, near Chichester; and, from the Society's garden, Crocuses, and seven varieties of Camèll*ia.* Black Jamaica Pine-apple, from T. A. Knight, Esq.

Also, from the Garden of the Society. Apples: Dutch Mignonne, kept in sand and fern, and in a box placed in the ground; Northern Greening, from a box in the ground; Boston Russet, good, kept in fern; Norfolk Beaufin, Bucks County, Blenheim Pippin, Paasch Apfel Rouge, Braune Mal Apfel, Norfolk Paradise; Young's Seedling, good; Pomme Violette, Framboise, Calville Malingre, Gros Bohn, Haggerston Pippin; Pomme de Fer, kept in fern; Tulip, kept in fern; Golden Russet, Derbyshire Apple, Devonshire Buckland, Lincolnshire Holland Pippin, Norfolk Paradise; Reinette de Canada, Court-pendu Plat, in fern, in a jar; Red Sweet Pippin, Cockle Pippin, Alfriston, from a box in the ground. — Pears: Easter Beurré, packed in fern in a jar; Keiser, a bad pear in this climate, does not ripen, this was packed in fern and kept warm; Bellissime d'Hiver; Easter Bergamot, from a wall.

April 5. It was announced that the fête would take place on Wednesday the 22d of June next.

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* M. *p*olifòlia of Jussieu, and of Smith in Rees's *Cyclopædia* and in his own *English Flora.*—*J. D.*

Presented. Mr. Ronalds having sent a collection of seeds for distribution at the Meeting, notice was given that they would be prepared and sent to those Fellows desirous of receiving them, upon their leaving their names. The following announcement from the Council was made: — The Council will award medals for the best exhibitions of the following productions upon the undermentioned days of meeting, provided any articles worthy of a medal shall be exhibited. For the best exhibition of Roses on the second meeting in June; Ditto, second meeting in September; Camellias, first meeting in April; Georginas, first meeting in September; Melons, first meeting in July; Pines, second meeting in July; Ditto, first meeting in February; Grapes, first meeting in June; Rhododendrons, second meeting in May; Azaleas, first meeting in June: and also that a large silver medal will be given for the most ornamental hardy plant, and a Banksian medal for the second best that may be exhibited before May 1. 1832.

Read. A paper on the Cultivation of the Carnation, in a letter to the Secretary; by Mr. William May. A paper on the double-flowering Yellow Sweetbriar, in a letter to the Secretary; by John Williams, Esq. C.M.H.S.

Exhibited. Coe's Golden Drop Apple, from Richard Brook, Esq.: this was a first-rate variety. Seedling Camellias, from John Allnutt, Esq. Apple unnamed, from Mr. James Young. Four Seedling Camellias, from Messrs. Chandler and Sons. Newtown Pippins, from James Webster, Esq.

Also, from the Garden of the Society. Apples: Calville Malingre, Norfolk Beaufin; Pomme de Fer, Reinette de Canada, Boston Russet, kept in fern; Norfolk Greening, Alfriston, Red Sweet Pippin, Cockle Pippin, Dutch Mignonne, kept in a box in the earth; Dutch Mignonne, Fenouillet Rouge, Tulip, London Pippin, kept in a closed jar. — Pears: Easter Bergamot, Double de Guerre; Beurré Rance, kept in fern. — Flowers: Poppy Anemones, *Ríbes* sanguíneum, aúreum præ̀cox, and setòsum; *Bérberis* glumàcea and *A*quifòlium, *P*rùnus sinénsis and doméstica fl. pl., Double-flowering peach, *A*mýgdalus macrocárpa and sibírica, *P*ýrus japónica (semidouble and single red), Azàlea índica phœnícea, White Azalea, Camél*lia* reticulàta and speciòsa, Eugèn*ia* malaccénsis, *R*ùbus spectábilis, Single Hyacinths, Crown Imperials, Fritillarias, Wallflowers, *C*ròcus alpìnus tardiflòrus, *A*mýgdalus commùnis.

April 19. — Announced that a new part of the *Transactions* of the Society, being the first of a new series, is in preparation, and will be ready by the end of May or beginning of June.

Read. An account of the different modes of keeping fruit which have been tried at the garden in the season of 1831. The Meteorological Journal kept in the garden for the months of January, February, and March.

Exhibited. Three seedling Apples, from John Entwistle, Esq. Paddington Pears, Duke of Gloucester Apples, Royal Nonpareils, and Old Nonpareils, from Thomas Hunt, Esq. Camél*lia* reticulàta, from Mr. J. A. Henderson. Ten sorts of Narcissus, and sixteen sorts of Polyanthus Narcissus, from Mr. James Young.

Also, from the Garden of the Society. Flowers: Schizánthus pinnàtus, Erythrìna herbàcea, Sinníng*ia* guttàta and Hellèri, *O*xalis floribúnda, *H*ibíscus *r*òsa-sinénsis; *R*ùbus spectábilis, *Ríbes* sanguíneum, aúreum sanguíneum, aúreum præ̀cox, aúreum serótinum, cèreum, and tenuiflòrum; Intoxicating Red Currant, *Amelánchier* sanguínea; *P*ýrus *p*runifòlia, *s*alicifòlia, baccàta, sinàica, and spectábilis flore pleno; Double-flowering Peach, *P*rùnus nìgra, insitítia, and sinénsis; *S*piræ̀a *c*hamædrifòlia and *h*ypericifòlia, *V*ella Pseùdo-*c*ýtisus, Double-flowering Furze, Lunària redivìva, Camél*lia* (new variety from China), Wallflowers, Early Tulips, Fritillarias, French Double Cherry.

May 2. — The Anniversary Meeting took place, when officers for the year ensuing were elected.

Art. VIII. Covent Garden Market.

	From £	s.	d.	To £	s.	d.
The Cabbage Tribe.						
Cabbages, per dozen:						
White - -	0	1	0	0	2	0
Plants, or Coleworts -	0	2	6	0	4	0
Cauliflowers, per dozen -	0	12	0	1	0	0
Broccoli, Purple, per bunch	0	1	6	0	4	0
Legumes.						
Peas, per half sieve -	2	2	0	4	0	0
Forced, per pottle - -	0	9	0	0	0	0
Shelled, per quart -	4	4	0	0	0	0
Kidneybeans, forced, per hundred - - -	0	3	0	0	5	0
Tubers and Roots.						
Potatoes - per ton	5	0	0	0	0	0
Potatoes - per cwt.	0	5	0	0	0	0
Potatoes - per bush.	0	2	6	0	0	0
Kidney, per bushel -	0	3	0	0	0	0
Scotch, per bushel -	0	3	0	0	0	0
New, per pound -	0	0	6	0	2	0
Jerusalem Artichokes, per half sieve - - -	0	1	6	0	0	0
Turnips, White, per bunch	0	0	6	0	1	6
Carrots, per bunch:						
Old - - -	0	1	0	0	1	3
Young - - -	0	0	9	0	1	0
Horn - - -	0	1	0	0	1	6
Parsneps, per dozen -	0	0	6	0	0	9
Red Beet, per dozen -	0	2	0	0	3	0
Skirret, per bunch -	0	1	0	0	0	0
Scorzonera, per bundle -	0	1	0	0	1	3
Salsify, per bunch - -	0	1	0	0	1	3
Horseradish, per bundle -	0	2	6	0	8	0
Radishes:						
Red, per dozen hands (24 to 30 each) - -	0	0	6	0	1	0
Turnip, White and Red, per bunch: - -	0	0	1	0	0	2
The Spinach Tribe.						
Spinach per sieve -	0	1	0	0	1	3
Spinach per half sieve -	0	0	9	0	0	0
Sorrel, per half sieve -	0	1	0	0	0	0
The Onion Tribe.						
Onions:						
Old, per bushel - -	0	14	0	1	1	0
Green (Ciboules), p. bunc.	0	0	3	0	0	4
Leeks, per dozen bunches	0	1	0	0	1	6
Chives, per dozen roots -	0	2	0	0	0	0
Garlic, per pound - -	0	1	0	0	0	0
Shallots, per pound - -	0	1	6	0	2	6
Green, per bunch -	0	0	6	0	0	8
Asparaginous Plants, Salads, &c.						
Asparagus, per hundred -	0	2	0	0	10	0
Lettuce, per score:						
Cos - -	0	1	0	0	3	0
Cabbage - -	0	0	4	0	1	3

	From £	s.	d.	To £	s.	d.
Celery, per bundle (12 to 15)	0	0	6	0	1	3
New - - -	0	2	0	0	2	6
Small Salads per half sieve	0	1	6	0	2	6
Small Salads per punnet -	0	0	2	0	0	3
Watercress, per dozen small bunches - - -	0	0	4	0	0	6
Burnet, per bunch -	0	0	2	0	0	0
Pot and Sweet Herbs.						
Parsley, per half sieve -	0	1	6	0	2	6
Tarragon, per dozen bunches	0	6	0	0	0	0
Purslain, per punnet -	0	1	0	0	0	0
Fennel, per dozen bunches	0	2	0	0	0	0
Thyme, per dozen bunches	0	3	0	0	0	0
Sage, per dozen bunches	0	2	0	0	0	0
Mint, per dozen bunches	0	2	0	0	0	0
Peppermint, dried, per dozen bunches - -	0	1	0	0	0	0
Marjoram, forced, per dozen bunches - -	0	8	0	0	0	0
Savory, per dozen bunches	0	3	0	0	0	0
Basil, forced, per doz. bunc.	0	12	0	0	0	0
Rosemary, per doz. bunches	0	6	0	0	0	0
Lavender, dried, per dozen bunches - - -	0	3	0	0	0	0
Tansy, per dozen bunches	0	1	6	0	0	0
Stalks and Fruits for Tarts, Pickling, &c.						
Rhubarb Stalks, per bundle	0	0	6	0	1	6
Edible Fungi and Fuci.						
Morels, per pound - -	0	14	0	0	0	0
Foreign - - -	0	14	0	0	0	0
Fruits.						
Apples, Dessert, per ½ sieve:						
Reinette grise - -	0	7	0	0	10	0
Baking, per bushel -	0	4	0	0	6	0
French Crabs - -	0	8	0	0	10	0
Peaches, per dozen -	2	8	0	3	0	0
Almonds, per peck -	0	5	0	0	6	0
Cherries, per pound -	1	5	0	2	2	0
Gooseberries, per half sieve	0	4	0	0	6	0
Strawberries, forced, per oz.	0	0	6	0	2	6
Pine-apples, per pound -	0	8	0	1	1	0
Hot-house Grapes, per lb.	0	8	0	1	5	0
Cucumbers, frame, per brace	0	1	0	0	5	0
Oranges per dozen -	0	0	9	0	2	6
Oranges per hundred	0	4	0	0	18	0
Lemons per dozen -	0	1	0	0	2	0
Lemons per hundred	0	6	0	0	14	0
Sweet Almonds, per pound	0	2	3	0	3	0
Brazil Nuts, per bushel -	0	12	0	0	16	0
Spanish Nuts, per peck -	0	4	0	0	4	6
Barcelona - - -	0	0	0	0	5	0
Eggs of Silkworms, p. square	0	1	0	0	0	0
Garden Snails, per quart -	0	0	6	0	0	0

From the time of my former communication to the 7th of May most sanguine expectations were entertained of an abundant fruit season; the trees had bloomed well, and the weather had been generally favourable to setting the fruit. Gooseberries and currants were thought secure, and promised the most abundant supplies. The cherries, pears, and plums had also passed all danger from blight; and many of the earlier sorts of apples were safe. About the 1st of May some genial showers were felt, succeeded on the 3d and 4th by heavy rains, and partial hail-storms. On the 5th and 6th the weather cleared up, the wind shifted to the north-eastward, and a severe frost followed on the morning of the 7th, which produced ice one third of an inch thick, and destroyed the prospects of the season completely. This is the more to be lamented, as the gardeners have been suffering heavy losses through the winter by the depressed state of our markets, and were looking forward to a full season for relief. Some attempts at calculating the loss sustained have been made, but the data on which to determine such calculations must necessarily be so vague, that I have great difficulty in forming any estimate to be relied on; however, I can have no hesitation in concluding that 100,000*l.* would fall far short of the total loss sustained, even making liberal allowance for the difference of prices arising from the difference in quantity. I now allude only to the district immediately surrounding London, from which we obtain our principal supplies; but, in estimating the loss throughout the country (for the mischief has been the same almost everywhere), a sum equal to 2,000,000*l.* has been spoken of. The season was, previously to the 7th, considered a week or ten days later than last year; but, since that date, it may be looked to as being at least three weeks in arrear as to our general supplies. The early peas have been materially injured, and in some cases completely destroyed. The prices in the list are merely nominal *, very limited quantities having been yet furnished; two pottles only, on the 26th (necessarily forced), were sold for 20*s.*, producing half a pint shelled, which sold for 25*s.*, or something less. The largest quantity was a parcel, nearly equal to one half sieve, on the 14th of May. There is no prospect of any supply from the open ground, under the most favourable circumstances, in less than a week or ten days. About the 19th of May has been, for some years past, the time at which they are brought to market. Forced strawberries have been in good supply, and latterly very low in price; some parcels of middling quality have been sold at 4*d.* to 6*d.* per oz. Cherries have been some time in the market; the first appeared on the 23d of April, and produced 42*s.* per lb., since which they have been declining in price, and are now sold at 15*s.* to 21*s.*, the quality throughout the time has been excellent. Grapes have been furnished liberally, and of excellent quality; the price gradually diminishing as the season has advanced. Pine-apples have not been very abundant, but the demand for them has been so limited that the prices have been low for this early season.

A few fine peaches were exhibited for the first time on the 16th, but the price in the list is a mere calculation from that which has been asked for them. Asparagus from the natural ground was brought to market on the 14th of April, but not in any quantity until the first week in May, when the supply was checked by the sudden cold and frost of the 6th and 7th; after which it became scarce until the 12th and 14th, when it was again in supply, but from the coldness of the succeeding nights it has not as yet been so abundant or large as usual.

Cabbages of excellent quality were in good supply on the 19th of April, and have continued to be liberally furnished since; owing to the coldness of the nights, they have not been so fine; but, in consequence of the scarcity of other vegetables, have brought very good prices.

Forced potatoes are in great abundance, and of excellent quality; indeed, they have been heavier of sale, and at lower prices comparatively, than almost any other article. Cucumbers were scarce and dear in the early part of April, but since that time have been in good supply, and of excellent quality, at reasonable prices. Cauliflowers at first came to hand freely; but since the frost, which has much injured them, they have been much more scantily produced, and very high prices have been obtained for them. Rhubarb continues to maintain its price; and though the market has been occasionally supplied by the waggon load (on the 7th of May as many as six entire waggon loads and four cart loads, with an immense quantity in baskets), yet, from the increasing demand for it, it was all disposed of at a remunerating price. Most other articles have been more or less affected by the fluctuations in the season; but, on the whole, an improvement in the prices has consequently taken place.

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* The prices specified have a retrospective range for the last two months.

Very large supplies of potatoes from Scotland, in the month of April, depressed the prices very materially, and some serious loss to the shippers must have been the consequence: but, from the continued coldness of the spring, they have now become more in demand, and obtain higher prices; and as the prospect of the new crop has been retarded for at least three or four weeks, in consequence of the severe and frequent frosts, it is probable they may maintain the present prices for some time to come. — *G. C.* *Covent Garden Market, May* 19. 1831.

ART. IX. *Obituary.*

DIED, on the 18th of November, 1830, suddenly, at his residence in Huntingdon, *Mr. James Wood*, aged 38, nurseryman and florist, who had been for some months afflicted with dyspepsia, accompanied by great depression of spirits. He was highly respected in his own neighbourhood, and well known to a large circle of horticulturists and florists; having for nearly twenty years had the superintendence of the business established by his father at Huntingdon, which was carried on under the names of "Messrs. J. Wood and Son." He received the usual education of a tradesman's son at the grammar schools of Kimbolton and Biggleswade, and having early manifested great love of plants, with a singular precocity in acquiring a knowledge of their names, peculiarities, and habits, he became, when very young, a valuable acquisition to the rapidly increasing business of his father. By unremitting assiduity, punctuality in his engagements, and obliging manners, and animated with an ardent desire for self-improvement, together with great zeal in the general advancement of horticulture, he soon became not only advantageously connected with the trade, but conspicuous in the floral world, and mainly contributed to the foundation and prosperity of that now flourishing establishment, the "Huntingdonshire Horticultural Society." In that and similar institutions at Baldock, Biggleswade, Bedford, Cambridge, and Whittlesea, he was one of the most successful competitors, particularly in the auricula and carnation tribes; though producing of late years at those Societies principally his own seedlings. We are indebted to him for those magnificent flowers, the *D*elphínium grandiflòrum màjus, Dodecàtheon Meád*ia* gigantèa, and the Dodecátheon Meád*ia* élegans: the latter two raised from seeds. His sudden death is deeply lamented by his family and friends, and may justly be regretted by the profession, of which he was an ornament. —*F.*

Robert Barclay, Esq., of Bury Hill, Surrey, a distinguished patron of botany and vegetable culture; and *Thos. Hope, Esq., of Deepdene*, near Bury Hill, a man of highly cultivated taste in architecture and landscape-gardening; both died within the last three months. Mr. Hope was the author of an Essay on Gardening, which first appeared in *The Review of Works of Art*, a periodical published some years ago. We had Mr. Hope's permission to reprint this article in the Gardener's Magazine, together with his promise to look over the proofs; but, unfortunately, we neglected to do this in time to obtain the author's last corrections. How much the botanical and gardening world are indebted to Mr. Barclay, this Magazine and most of our botanical periodicals attest in almost every number published during the last twenty years. Mr. Barclay was not less estimable as a liberal enlightened, and most benevolent man, than as a patriot and an encourager of botany and gardening. —*Cond.*

THE GARDENER'S MAGAZINE,

AUGUST, 1831.

PART I.

ORIGINAL CORRESPONDENCE.

Art. I. *General Results of a Gardening Tour, during May and June in the present Year, by a circuitous Route from London to Manchester.* By the Conductor.

The object of this article is to generalise the impressions which we have received from visiting a considerable number of gardens between London and Manchester, the details of which will be given in a future Magazine.†

We left Bayswater April 24., and proceeded by Harrow and Pinner to Rickmansworth, where we saw *Moor Park; Amersham (*Chalfont House, *Shardeloes, *Hampden House, and *Chequers); Aylesbury (*Wootton); Buckingham (Stowe); Banbury (*Wroxton Abbey, Radway Grange, and *Compton Verney); *Warwick (Warwick Castle); Leamington (Radford, Offbury Rectory, and Cullis's Nursery); Kenilworth (*Guy's Cliff and *Stoneleigh Abbey); Coventry (*Whitley Abbey, *Coombe Abbey, the gardens of Mr. Howe and of Mr. Herbert, Allesley Rectory, Weare's

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† Those places considered as mansion residences are marked by a star (*), to distinguish them as a class. Having sent our notes to London, book after book, as they were filled, we have probably forgotten to enumerate a number of places at which we called; and we have purposely omitted the names of various seats seen from the public roads, our remarks on which will appear in the details of our tour. The names given above are for the purpose of putting the reader in possession of the data on which we found the opinions that we are now about to express in an offhand manner, and send to the printer as written.

Nursery, *Packington Hall); Birmingham (*Aston Park, *Edgbaston Hall, Moor Green, *Moseley Park, Kitwell, Selly Hill, Bourne Brook, Grove House, *Sandwell; the villas or gardens of Mr. Willmore, Mr. Barker, Mr. John Linwood, Mr. George Hadley, Mr. Godwin, Mrs. Merry, Mr. Dugdale Houghton, Miss Moore, the Rev. J. Corrie, Mr. Osborn, Mr. Clark, and a great many others; the nurseries of Mr. Pope, Mr. Yates, Mr. Picken, Mr. Evans, Mr. Fletcher, Mr. Beech, and Mr. Brunton, and the Frederick Street nursery; the market-garden of Mr. Mist; the subscription bowling-green at Edgbaston; and the ground destined for the garden of the Birmingham Botanical and Horticultural Society, for which, at the request of the Society, we formed a plan, which we feel perfectly confident will render it the first botanical and horticultural garden in England); Bromsgrove (Grovely House, *Hewel Park, and Mr. Maund's garden); West Bromwich (the gardens of Mr. Smith and Mr. Edwin Bullock); Dudley (* Hinley, Dudley Castle, the Priory, Tansley Hill, the Trindle, * the Ellowes, and the villas or gardens of Miss Parsons, Mr. M. Houghton, Mr. Thos. Badger, Mr. Isaac Badger, Mr. Bourne, Mr. Jos. Bourne, Mr. Walter Williams, and Mr. Fellowes; the public bowling-green at the Trindle, Pilsbury's nursery at Wombourne; and the early potato grounds, where several acres of potatoes are forced by the spontaneous combustion of coal in the old coal mines underneath); Kidderminster, (* Lea Castle, * Prestwood, * Enville, and * Arley Hall); Stourbridge (* Hagley and the Leasowes); Penn (the gardens of Mrs. Jukes and of Mr. Deakin); Wolverhampton (Oxley House, * Chillington Hall, the villas and gardens of Mr. Wynne, Mr. Pearson, Miss Scott, &c., and the nurseries of Mr. Lowe); Stafford (Spring Vale, Trentham, and * Barlaston Hall); Cheadle (* Heath House, Heybridge, and Platt's nursery); Farley (Alton Towers, and * Wootton Lodge); Ashbourne (* Illam Hall, and Dove Dale); Bakewell (Haddon Hall, Chatsworth, Middleton Dale); Castleton; Chapel in le Frith (*Lyme Park); Stockport (Wood Bank); Manchester (the gardens of the Botanical and Horticultural Society, Smedley Old Hall, Broughton Old Hall, Broughton New Hall, *Heaton Park, Priory, Lark Hill, Buele Hill, the Hope, Spring Wood, * Trafford Park; the villa of William Bow, Esq., at Lower Broughton; Cunningham's nursery, Faulkner's nursery, and a number of other places, besides market-gardens, the comparative merits of which will be given with the continuation of this article in our next Number).

In generalising the gardening or agricultural information derived from a tour through any country, the first object should always be to state the natural history of that country; because on soil, surface, and climate is founded all vegetable culture. It may seem almost trifling, to notice the geology of a tour of a few miles in one's own country; but we do so, as we do many other things in this Magazine, for the sake of inducing the young gardener to think scientifically on every subject connected with his profession or general welfare.

The London clay extends beyond Harrow and Pinner, where it is succeeded by chalk with flints; this is in some parts covered with gravel, the surface of the clay being flat, or gently undulated, with some rising nodules, of which the most conspicuous is Harrow Hill. The surface of the gravel and chalk is more wavy than that of the clay. The soil on both is loamy or clayey, and that on the chalk is mixed with flints. The chalk continues to within a few miles of Aylesbury, where a lower stratum of clay succeeds, and extends some miles beyond that town; the surface being generally even, and the soil a strong loam. Earthy limestone now begins, and continues, through Buckingham, half way to Banbury; this belongs to what geologists denominate the oolite limestone formation; the surface gently varied, and the soil rather stiff, but generally on a dry subsoil. Red sandstone and a dry brown light soil succeed, and continue through Birmingham and the coal country beyond, to the neighbourhood of Ashbourne. Here the hard semicrystalline limestone of Derbyshire, with all its singularities of formation and stratification, with its caverns, pits, beds of volcanic toadstone and basalt, and metallic veins commences, and continues till we reach the neighbourhood of Stockport in Cheshire, where we again enter on the sandstone, which continues to Manchester. No hilly country occurs in this route till we arrive near Cheadle, with the exception of some small cultivated hills near Birmingham, Bromsgrove, Stourbridge, and Dudley. From Cheadle to Ashbourne the country is very irregular, with numerous winding narrow valleys, having rocks protruding from their sides; beyond Ashbourne towards Dove Dale, the surface becomes very hilly and naked, and continues so to Chapel in le Frith. The elevated bleak aspect of the Peak in Derbyshire used to be well known. It is now almost entirely enclosed by stone walls, and covered with pasture and plantations. Approaching Stockport, the view of Cheshire and Lancashire conveys the idea of a fertile and highly cultivated plain on sandstone.

The variety of indigenous plants, as seen from the road, in all this tract of country is much less than might be imagined; partly because a ditch and hedge form a sort of artificial habitat, which has a tendency, wherever it occurs, to encourage the same plants.

Stellària gramínea is found almost every mile, with the exception of some parts of the Peak, from Bayswater to Manchester. The common trees on the London clay are oaks and elms; beech abounds in masses on the chalk; ash on the red sandstone, especially on the drier and richer soils; the wych elm is found on the shady side of limestone hills in Derbyshire and Staffordshire; on the dry parts of such hills, and especially in Dove Dale, the *P*ỳrus *À*ria abounds; and, in the moister parts, the yew.

We shall say little respecting native birds and insects; the singing birds everywhere were of the thrush family, and of the lark and the linnet kind: in the milder parts, as far as Kidderminster, the nightingale was heard; the plover and cornrail were also heard near Kidderminster. House sparrows, like the house fly and the cabbage butterfly, were found everywhere near human habitations.

The weather from the 24th of April to this 24th of June has been chiefly dry; and until the last three weeks, the wind has been in the east. About the 7th of May a severe frost injured the blossoms and young shoots of both native and foreign plants and trees, over the whole tract included in our tour. The American shrubs were the most severely hurt; their young shoots and their expanded blossom buds being entirely cut off. Even the incipient shoots of the ash tree were blackened, and hundreds of acres of larch and spruce firs in the extensive plantations round Heath House, Alton Towers, Illam, and other places, were rendered quite brown, and still continue so. The Scotch pine had not commenced growing, and therefore escaped. Seedlings of every kind in the nurseries, the blossoms of fruit trees and strawberries in the market-gardens, and in private gardens even the wall trees, have all suffered in a degree only equalled by two or three seasons within the remembrance of the oldest gardeners. The only similar injury sustained in our remembrance was in the spring of 1819. The potatoes in the fields were cut down by the frost: but they have since sprung up again, and their appearance, together with that of the corn crops, is now generally promising.

Having thus slightly indicated the mode of generalising the natural history part of a gardening tour, we shall next attempt to generalise the gardening information obtained, arranging our remarks under the heads of Palace and Mansion Residences, Villas, Cottage Gardens, Town Gardens, Public Gardens, Nurseries, and Market Gardens. As belonging to the subject of Rural and Domestic Improvement, promised to be registered in our titlepage, as well as in our original prospectus and in the introduction to our first Number, we shall subjoin a few remarks on plantations, agriculture, roads and railroads, canals, towns, cottages, vegetable markets, cemeteries, architecture, education, and condition of the labouring or poorer classes of society.

Palace Residences. — Among these we include Stowe, Warwick Castle, Trentham, Alton Towers, and Chatsworth.

Stowe, taking it altogether, and considering it as a work of art, appears to us the most perfect of these residences: nature has done little or nothing; man a great deal, and time has improved his labours. Stowe is disfigured, however, by one of the worst kitchen-gardens in the country, which occupies what is by nature the finest part of the grounds, and forms a conspicuous deformity from the entrance front. It is difficult to conceive why this garden was so placed, and not less so, to account for its being permitted to remain. The extensive pleasure-grounds have been greatly improved since we first saw them in 1806, by the present gardener, Mr. Brown, who may justly be said to have received the mantle of his great namesake and predecessor in the same garden, our common father in landscape-gardening. We were sorry to learn that these gardens are not kept up as they used to be; the number of hands being yearly lessened. In new and rare plants, trees, and shrubs, the grounds are not keeping pace with the nurseries, as the furniture of the house, especially the grates of the fireplaces, is falling behind the best fashions of the day. Methley's grates (Vol. VI. p. 108.) are much wanted.

Warwick Castle has little to recommend it but the house, and the view from its windows. The approach road cut through solid rock, with sides as formal and perpendicular as a drift-way to a mine, or the sides of a canal, still remains in all its deformity, and confirmed the bad impression which it had made on us twenty-five years ago. The rocks ought to be broken and varied, so as to give the idea of a road through a partially filled up natural chasm. The pleasure-grounds are worse kept up than at Stowe; and the opaque-roofed green-house, containing the celebrated Warwick vase, is disfigured by sickly pelargoniums, and other commonplace plants. Such green-houses, if they are to have plants in them at all, ought first to have glass roofs; and, secondly, only very large plants in large pots or boxes. In such houses no small plant can ever thrive. In the whole world of gardening there is not a sight more disagreeable to us, than that of great numbers of sickly little plants in pots. The gardener is continually labouring at them, and his labour never tells; a little of it bestowed on a flower-border or a shrubbery would produce more satisfaction to a well regulated taste, than thousands of pots in the state we have described. In the open country the love of plants in pots, merely as such, is a disease contracted by the poor from their contact with the rich; in towns it is justifiable, because there a sick plant is better than none.

Trentham has the merit of being kept in good order; and in the kitchen-garden are the best crops of pines, grapes, figs, peaches, and wall-fruit that we have seen since leaving London. The Marquess of Stafford, judging from Mr. Loch's book on the improvements made on His Lordship's estates, employs his immense wealth as he ought to do; and, on this account he has always ranked in our minds with the Dukes of Bedford and Devonshire. The gardener here (Mr. Woolley) is a very modest man, and of great worth in his profession.

Alton Towers is a very singular place, both in its geology, which is peculiarly adapted for grand and picturesque effects, and in what has been done to it by the late Earl of Shrewsbury. The house, or abbey, stands on a piece of table land, of 50 or 60 acres in extent; and this table land is bounded on three sides by two valleys, which commence in a gentle hollow near the abbey, and lose themselves in a third broad and deep valley in an opposite direction. The surrounding country is composed of similar valleys, among portions of table land or hills. The surface of both hills and valleys is generally in pasture, with very few human dwellings, or in plantations of pines, and large firs, from ten to thirty years' growth. The rock is every where red sandstone, often protruding from the sides of the valleys in immense stratified masses, the exposed parts occasionally worn by the weather into anomalous shapes, but at a little depth under ground affording excellent stone for building. The natural character of this part of the country is grand and picturesque, with a solitary and wild air, approaching to the savage.

The remains of a very old castle, belonging to the Shrewsbury family, exist on a rock protruding into one of these valleys; but the site of the present abbey was, twenty years ago, nothing more than a farm house. Here the late Earl of Shrewsbury commenced his operations, and employed hundreds of labourers, mechanics, and artisans, from 1814 till his death in 1827.

This nobleman, abounding in wealth, always fond of architecture and gardening, but with much more fancy than sound judgment, seems to have wished to produce something different from every thing else. Though he consulted almost every artist, ourselves among the rest, he seems only to have done so for the purpose of avoiding whatever an artist might recommend. After passing in review before him a great number of ideas, that which he adopted was always different from every thing that had been proposed to him. His own ideas, or his variations of a plan that he had procured, were transferred to paper by an artist, or clerk of the works, whom he kept on purpose; and often, as we have been informed by Mr. Lunn, the late gardener, were marked out on the grounds with his own hands. The result, speaking of Alton as it was at the time of the late earl's death in 1827, and as we saw it shortly before, viz. in October, 1826, was one of the most singular anomalies to be met with among the country residences of England. An immense pile of building in the way of house, with a magnificent conservatory and chapel, but with scarcely a habitable room; a lofty prospect tower, not built on the highest part of the grounds; a bridge and an embankment over a valley, without water underneath; ponds and lakes on the tops of hills; a quadrangular pile of stabling in the midst of the pleasure ground; and, what may be said to have eclipsed, and still to eclipse, every thing else, a valley, naturally in a high degree romantic with wood, water, and rocks, filled with works of the highest degree of art in architecture and gardening. The private approach roads to Alton, on every side, are several miles in length; they are conducted along the bottoms and sides of winding rocky valleys, with a stream in the bottom, and the sides more or less wooded. It is difficult to decide whether the best approach be that from Uttoxeter or that from Cheadle. We arrived from the former town in 1826, and from the latter this year.

By the road leading from Uttoxeter we came unexpectedly close to the house, and near the head of the north side of the valley, which contains the chief wonders of the place. The first objects that met our eye were the dry Gothic bridge and embankment leading to it, with a huge imitation of Stonehenge beyond, and a pond above the level of the bridge alongside of it, backed by a mass of castellated stabling. Farther along the side of the valley, to the right of the bridge, is a range of architectural conservatories, with seven elegant glass domes, richly gilt. Farther on still, to the right, and placed on a high and bold naked rock, is a lofty Gothic tower or temple, consisting of several tiers of balconies round a central staircase and rooms; the exterior ornaments numerous, and resplendent with gilding. Near the base of the rock is a fountain, of a peculiar construction, which is amply supplied from an adjoining pond. Behind, above, and beyond the range of conservatories, is a lake, and, beyond the lake, another conservatory with curious wings and statues; below the main range of conservatories are a paved terrace walk with a Grecian temple at one end, and a second terrace containing a second range of conservatories. The remainder of the valley, to the bottom and on the opposite side, displays such a labyrinth of terraces, curious architectural walls, trellis-work arbours, vases, statues, stairs, pavements, gravel and grass walks, ornamental buildings, bridges, porticoes, temples, pagodas, gates, iron railings, parterres, jets, ponds, streams, seats, fountains, caves, flower baskets, waterfalls, rocks, cottages, trees, shrubs, beds of flowers, ivied walls, rock-work, shell-work, root-work, moss houses, old trunks of trees, entire dead trees, &c., that it is utterly impossible for words to give any idea of the effect.* There is one stair of 100 steps; a cottage for a blind harper, as large as a farm house; an imitation cottage roof, formed by sticking dormar windows, accompanied by patches of heath to imitate thatch, and two chimneys, on a large mass of solid rock, which, seen at a distance, on a steep bank embosomed in wood, bore naturally some resemblance to the sloping roof of a cottage grey with lichens. As the sandstone rock protrudes from the sides of the valley in immense masses, abundance of use has been made of it to form caves, caverns, and covered seats; it has even been carved into figures, and we have Indian temples excavated in it, covered with hieroglyphics, and in one place a projecting rock is formed into a huge serpent, with a spear-shaped iron tongue and glass eyes. There is a rustic prospect tower over an Indian temple, cut out of solid rock on the highest point of the north bank; and, in the lowest part of the valley, there are the foundation and two stories (executed before the death of the late earl) of an octagon pagoda, which is to be 100 ft. high, and to spout water from the mouths of 100 dragons. This pagoda, the Gothic temple, the range of gilt conservatories, and the imitation of Stonehenge, of all which we have been furnished with elevations, form the leading artificial features of the valley. The valley itself is upwards of a mile in length; it gradually widens from its commencement at the stone bridge with the pond above it, till it terminates by opening into a very wide valley, containing a considerable stream and a navigable canal. This last immense valley, it is said, the late earl intended to cover entirely with water; and, as it would have saved the Canal Company a mile or two of canal, they offered to form the dam or head at their own expense.

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* Through the kindness of the present earl, and the obliging disposition of his artist and clerk of the works, Mr. Fradgley, we have received a general plan of this valley and the grounds for upwards of a mile in diameter, with plans and elevations of many of the principal objects. Mr. Fradgley has also engaged to take several sketches for us from points of view which we pointed out, all of which will appear, with the details of our tour, in a future Number.

In approaching from Cheadle, we arrive in front of the castellated stables, and see the abbey across the pond above the level of the bridge. Proceeding a little farther towards the dry bridge, Stonehenge appears in the foreground, and the seven gilt glass domes of the main range of conservatories below. Raising the eyes, the lofty Gothic temple appears on the left of the picture; and on the right, across the valley, the harper's cottage. In the centre of the picture, over the domes in the foreground, the valley loses itself in a winding bank of wood, in a style of great grandeur and seclusion. None of the details of the valley here obtrude themselves; and the stranger, coming from a wild country with no marks of refinement, on this view so unexpectedly, must feel it to be singularly impressive. It strikes him with surprise, and fills him with astonishment and delight, to find so much of the magnificence of art amidst so much of the wildness and grandeur of nature. The imitation of Stonehenge, too, is a feature in artificial landscape which we have not elsewhere seen, and a stranger is puzzled and confounded by finding a stream and a small waterfall, supplying a lake on what he conceives to be the highest point of high ground.

Thus far as to the first impressions. We shall not here go into details. It is evident that the contents of the valley defy all criticism; and that, perhaps, is paying the author a compliment after his own heart. If his object were originality, and that of a kind which should puzzle and confound, he has certainly succeeded; and having attained the end which he proposed, as far as it respects himself, he is to be considered a successful artist. How far it may be commendable for a man of wealth to gratify a peculiar taste, rather than one which is generally approved by the intelligence of the country in which he lives, is not in these days, perhaps, a question of much consequence.

The present earl has wisely considered it his duty to continue employing as many hands as were employed by his predecessor; and his works, on the whole, are in a taste that will be more generally approved. In the gardens, he has obliterated a number of the walks, stairs, and shell-works; which we almost regret, because no trifling alteration can ever improve what is so far out of the reach of reason. To the house, the present earl has made, and is making, extensive additions, and, among other things, a picture gallery, which will be one of the largest in the kingdom. Exclusive of the valley, which we would not meddle with, the great faults of the place are, the number of roads in front of the house, and the manner in which the house is approached. There is not one of the approach roads that forms a good line, either in regard to direction or slope; and yet there never was a situation which afforded so many opportunities for displaying that greatest of all beauties in road-making, viz. the art of conducting roads on the sides of hills, so as to attain any given height on any given surface, by an almost imperceptible and uniform ascent. Great errors in all the approaches are, their passing through the garden so as to destroy its seclusion, and their giving an imperfect view of the valley before arriving at the house. The approach ought to ascend by a different line to the level of the table land, and enter by a hall connected with the sculpture tower, so as to give no idea of the garden scenery till it was first seen from the windows, or from the terrace. The stables ought to be removed, and also the various cart and carriage roads in front of the house. Unless something of this kind be done, Alton Towers, notwithstanding the extent of its architecture, its picture gallery, and its entrance through a long, lofty, richly planted, and selectly decorated conservatory of surpassing beauty, will always be an unsatisfactory place. We have great hopes, however, from the present earl, who is open to reason, and, we believe, desirous of doing that which will permanently improve the place.

It gives us pleasure to observe that the valley is kept in excellent order by Mr. Miller, a reading and scientific gardener.* For this purpose, a number of women are constantly employed in weeding, sweeping, picking up dead leaves and insects, cutting off decayed flowers, and tying up straggling shoots, &c.; a practice which we cannot but highly commend. On certain occasions, these women are put into Swiss dresses, which must add to the singularity of effect. The plants in the conservatories are in their utmost beauty, chiefly through frequent removal. The conservatory at the house, with its plants, trays of choice flowers, sculptures, candelabras, vases of alabaster, stained glass windows at the extreme ends, chandeliers with coloured burners, exotic birds in magnificent cages, &c., surpasses any thing of the kind we have ever seen, and forms a suitable approach to the splendidly furnished gallery into which it opens.

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* Mr. Miller showed us in his dwelling, which, by the by, is unworthy of Alton Towers, or of a good upper servant any where, an excellent plan for a kitchen-garden, in which the walks are flag-stones, as suggested by us in a former Number. We may here mention, as a curious fact, that his predecessor, Mr. Lunn, before he left Alton, abjured the Protestant religion, and became a Catholic. We before mentioned the Duke of Norfolk's gardener, as the only Scotch Catholic gardener we had ever heard of: Mr. Lunn is the only Protestant gardener we ever heard of who turned Catholic.

During the life of the late Earl of Shrewsbury, and for some time after the present earl came into possession, the grounds were shown to all persons who put down their names at the inn at Farley, and there were certain public days when the gardens were open to every body. In consequence of injuries committed, the public are now entirely excluded, with the exception of such as come with their own carriage and livery servant. We submit to the present earl, that this is being by far too aristocratic. It is impossible to be five minutes in his company without feeling that he is a rational kind-hearted man; and we are sure it was not a movement of his heart which dictated the resolutions alluded to, and which we do not believe can be matched in the kingdom. We recommend for his imitation the practice at Chatsworth, which, at an average of the season, would only require an extra-labourer or two, who might be invalids unfit for any thing else, to walk round with each party, and would prevent all possibility of injury.

Chatsworth has always appeared to us an unsatisfactory place. The house is not situated on a platform of adequate size; and there is great awkwardness in the approach proceeding abruptly up hill. A square pile of building, too, in such a situation, is less suitable than a lengthened one; and the waterworks, though good in themselves, are scattered about the grounds in such a way, that, while they interfere everywhere with the natural beauties of the place, they no where combine in forming one grand artificial effect. They want concentration. The improvements now going on will probably remedy most of these evils. The house is being extended in length; there is an opportunity of concentrating the waterworks in the only situation fit for them, on the west front; and the approach may be made by a bridge across the river, directly on this front, to arrive at the house on a level. All, or almost all, the artificial waterworks we would form on this west front; and, instead of the cascade of twenty-four steps on the east front, we would lower the earth, and carry from the house a level surface diminishing in width back to the base of the rock lately laid bare by Mr. Paxton, and so produce a waterfall from a precipice of upwards of a hundred feet in height. The water of this cascade, which might be compared to that of Mamora, near Terni, in Italy, should fall into a basin at its base, which would supply the lower jets of the waterworks on the west front; while the same tubes which now supply the waterworks in the long canal would supply the high jets on the same front. If it were necessary, we believe the river might be turned off at a sufficiently high point, and led along the sides of the hills, so as to supply the highest pond, and of course the hundred-feet cascade, abundantly. After the united waters had supplied all the waterworks on the west front, they might be led southwards in a tunnel, and delivered so far up the river, as that the quantity of water where it passes the house would not be in the least degree diminished. The avowed art being concentrated on the west front, we would restore the other parts of the grounds, not to nature, but to a more natural style than that which they now assume; retaining or forming a platform of an irregular boundary, and on the same level as that now existing on the south front, on the east and north fronts. But we are aware of the risk of misconception which we incur by offering these hints without the illustration of a sketch.

The additional flower-gardens are in a highly enriched architectural taste; not being yet completed, it may be considered hardly fair to criticise them. Nevertheless, we must protest against the use of gravel in the walks of these architectural gardens. Smooth pavement, as at Heaton Park, ought unquestionably to be used, on the principle of utility or fitness; because pavement prevents the risk of the feet taking up gravel, and carrying it into the apartments. Such pavements would also suit much better with the stone basket-work, as it is called, on the turf. We protest also against the same edgings to flower-beds as are adopted in common shrubberies, but we shall defer further objections and suggestions till we have leisure thoroughly to explain them.

The kitchen-garden here contains twelve acres, and, as the foreman informed us, there are twenty-two men allowed for keeping it in order. With regard to weeds, it was cleaned down to the economic point; but the box-edgings were ragged; and, in one part, a long bed of ornamental plants was introduced, and bordered by turf serrated on the edges, or, as the ladies call it, vandyked. Nothing of this sort ought, in our opinion, ever to be introduced in such a kitchen-garden as that at Chatsworth; we would as soon introduce a plot of cabbages in the newly formed parterre at the house. What properly belongs to a kitchen-garden ought to be carried to the highest degree of excellence; but any thing foreign to it is in bad taste. With kitchen-gardens adjoining the mansion, and used as a place to walk in, or where there is little or no flower-garden, the case is different. Where the head-gardener's house is in the kitchen-garden, a flower-garden ought to be allowed for his wife; but it ought not to be placed at a distance from her residence, or so as to interfere with the general effect of the garden. Mr. Paxton has erected extensive ranges of wooden forcing-houses, and heated them by smoke flues. The construction we think good of its kind; but, after the experience of the wooden houses and smoke flues at Chiswick, and the general progress of opinion among gardeners on this subject, we confess we were rather surprised to see them adopted here. We have since learned that Mr. Paxton disapproves of metallic houses, and of heating by hot water; and we are not sorry that this is the case, because the public will have an opportunity of judging between his productions and those of other first-rate gardens where metallic houses and hot water are alone employed; viz., Woburn, Syon, Eaton Hall, Bretton Hall, &c. We regret that we did not find Mr. Paxton at home; and this circumstance prevents us from saying more on the subject at present. All the neighbouring gardeners agree in stating that he has greatly improved the garden department at Chatsworth, and we are happy in adding our testimony to the same effect.

It is most gratifying to us to be able to state that the Duke of Devonshire allows all persons whatever to see Chatsworth, the house as well as the grounds, every day in the year, Sundays not excepted, from ten in the morning till five (the latest hour at which the house can be entered) in the afternoon. The humblest individual is not only shown the whole, but the duke has expressly ordered the waterworks to be played for every one, without exception. This is acting in the true spirit of great wealth and enlightened liberality; let us add, also, in the spirit of wisdom. We are happy to learn that the duke intends to establish a picture and sculpture gallery, which, we have no doubt, will in like manner be open to the public, and, as at Woburn, delight and improve, while it attaches and reconciles. We have never heard of any injury being done to any object at Chatsworth; every party or person always being accompanied by an attendant.

Mansion Residences. The names of these are too numerous to be repeated, and therefore we have marked them thus (*), where first enumerated. (p. 385.) We shall only here notice a few general faults, as the details, which will be given afterwards, would more than fill this Number. Too great an extent of pleasure-ground, for the number of hands allowed to keep it in order, is an error that prevails every where. We scarcely know an exception; and the consequence is, that we have hardly seen one mansion residence kept in the order in which it ought to be. The pleasure-grounds at Stoneleigh Abbey, at Hewel Park, and at Barlaston Hall, are approximations to our *beau idéal;* but the kitchen-gardens at the first two places are badly situated.

Most proprietors of mansions have, within these few years, been obliged to curtail the number of hands allowed to their gardener; and, under such circumstances, the plan we should recommend would be, to reduce and concentrate the highly kept part of the pleasure grounds, and keep it near the house; never to attempt higher keeping at a distance from the house than is to be found at it, and leave all distant parts to run comparatively wild, but keeping the walks in good order, though without trimming their edges, or digging or hoeing the surface among shrubs. Some parts of the pleasure grounds at Sandwell, Guy's Cliff, and Deepdene are in the style to which we allude; but few gardeners hit the precise point where digging and trimming the edges of walks ought to be gradually left off. In wild pleasure ground scenery of this kind only three fourths of the width of the walk ought to be kept in high order, leaving the remaining fourth in the form of irregular broken edges, such as we see along the margins of gravelled approach roads which are much in use, and in which the gravel is on a level, or as nearly so as the nature of the soil and surface will admit, with the adjoining grassy surface. The difficulty with wild scenery created by art is, to avoid the appearance of waste ground covered with weeds; but this is to be got over by planting trailing evergreens, such as ivy, large-flowered St. John's wort, periwinkle, &c., and by abundance of evergreen shrubs, and such perennial herbaceous plants as will grow among turf.

It is very common among places of this class to have flower-gardens, or perhaps a green-house and parterre of flowers, at some distance from the house, with a portion of commonplace shrubbery, lawn, and gravel walk intervening. We conceive this to be in very bad taste. To whatever extent avowed art is carried, the highest degree ought almost always to be nearest to the most avowedly artificial object, viz. the house; and, from the garden front of that, art ought to spread along the lawn and the walks, diminishing in proportion to the distance, till it loses itself in scenery comparatively natural. Were this principle properly understood and acted upon, the money now spent upon even those places where the hands are greatly reduced, would produce tenfold the present effect. It would, in fact, give satisfaction; whereas, miles of walks and acres of land, in a state of mediocrity, never can give pleasure to the gardener or the stranger visitor, and surely not to the proprietor.

In adopting this plan, art should always begin high on the scale; that is, a portion near the house, if only a few yards of walks, a few groups of shrubs and flowers, and a quarter of an acre of lawn, should be kept to the highest degree of order and neatness; diminishing gradually or rapidly, according either to the extent of the place or the amount of the money allowed to keep it up. It may be thought that this would shorten the length of walks necessary for the health and recreation of a family too refined to take exercise by any kind of manual labour; but this is by no means the case. The style of keeping which we recommend in no degree interferes with the length of walks. Walks may extend for miles among scenery so wild as seldom to be touched by the hand of the gardener or forester; and this scenery may be as interesting to the botanist, and even to the lover of showy flowers, as the most highly kept pleasure ground; while it is a great deal more so to the lover of nature and of picturesque scenery. All that the gardener has to do is, to plant at first a copious variety of trees and shrubs in masses of one sort together, every mass being very irregular in shape, and running into those adjoining; to plant all the herbaceous plants which are hardy and cheap, and leave them to run wild; to cut in the trees and shrubs when they obtrude too much on the walks, or on one another; and to keep the walks constantly fit for use. This last operation may be very advantageously done by the labour of women and children, or by old men unfit for any thing else.

Villa Residences include those not enumerated as palaces (p. 389.), or starred as mansions (p. 385.). It gives us great pleasure to state that we found a few of these very much to our mind, and one or two almost perfect. The last were the work of ladies; Mrs. Robt. Philips of Heybridge, and Mrs. Corrie of Woodville. The style of planting and managing the groups of flowers on the lawn, in both these places, is entirely to our mind; and each displays more floral beauty and neatness in less than an acre, than the large flower-gardens at Stowe, and the extensive flower-beds on the lawn at Stoneleigh Abbey, both very highly kept, do in ten acres. We hope to give plans of the beds, and lists of the flowers, in the gardens of both these ladies, in proof of what we assert. Mr. Barker's villa, in Monument Lane, Birmingham, ranks next in order to Heybridge. Moor Green, James Taylor, Esq., is all but perfect in its kind; but it wants botanical interest. As far as landscape-gardening is concerned, the Parsonage at Off-church Bury is also nearly perfect, and eminently beautiful; but the flower-beds contain only a poor collection. The proprietor, the Rev. Matthew Wise, is the descendant and inheritor of the fortune of Mr. Wise, the gardener to Queen Anne, and ought to patronise botany as well as landscape-gardening. The villa of Wm. Bow, Esq., at Lower Broughton, and that of the Rev. J. Clowes of Broughton Old Hall, are both highly kept, and of the very highest floral and botanical interest.

The faults of the villa residences which we have seen are, to a certain extent, those of the mansion residences; and there are other faults, both in the original laying out and in the keeping and management, which are also common to both. We shall pass over the ridiculous twisting and turning of walks, without real or apparent reason, which is so frequently met with, and rather dwell on the bad shapes and improper places of groups of shrubs and flowers on lawns. In several parts of this Magazine we have laid down the fundamental principles which ought to guide the placing of groups, viz. to arrange them so as to render them cooperating parts, with those which surround them, in the formation of one whole. It is not very easy to convey this principle to a mind that has not been a good deal cultivated in respect to the beauty of lines and forms; or to a person who has not had some practice in sketching landscape. All that can be done with grown-up gardeners is, to lay down a few rules derived from the above fundamental principle; and all that can be hoped from the adoption of these rules is, the avoiding of glaring errors. The first rule, then, is, that no group ought to be so placed as to admit of its being moved without deranging other groups, or the adjoining walks or objects. In other words, every group ought to fit in to the precise situation where it is placed, without admitting of its being moved to the right or left, backwards or forwards, without deranging the effect of the whole of which it forms a part. To fit any given situation, its outline must coincide more or less with some other outline (*fig.* 72.); and not diverge or converge with that outline (*fig.* 73.) at random, or have no relation to it at all.

A second rule is, that where the whole, that is, the lawn or area to be laid out, is of an irregular shape, regular figures as groups should be very sparingly introduced. What can be more disagreeable than a lawn sprinkled over with circles, ovals, hearts, diamonds, &c., without any connection among themselves, or with the objects that surround them? A third rule is, that all figures should be long and narrow rather than round and lumpish, as producing most effect with least ground. A fourth rule is, that a group, or even a tree, should seldom or never be placed in the centre of any large place or scene

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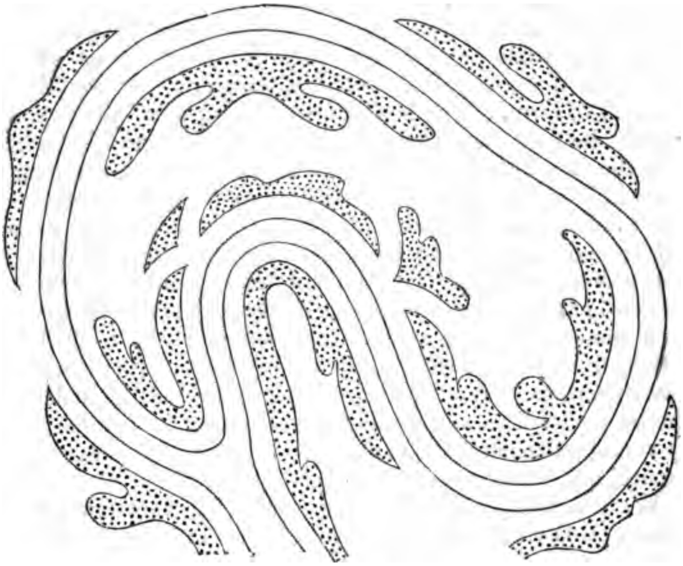

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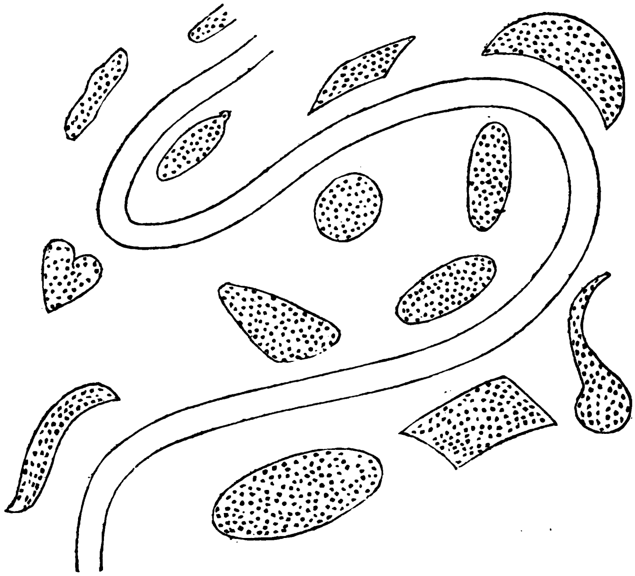

where natural beauty is an object; for that gives immediately the idea of art, and, besides, forms a point for the eye to measure from, diminishing the apparent size of the place, and destroying what painters call breadth of effect, or what a gardener, if he could look with a painter's eye, would call breadth of lawn. The last rule we shall give is, that groups should be kept near the walks; and that, when they extend into the lawn, they should be in clusters; so that a map of the whole would show alternate clusters of groups, and broad spaces of lawn. To these rules there are, of course, exceptions; and it is not to be expected that any gardener can apply them perfectly who does not understand the principle from which they are drawn; but if they were even adhered to in a general way, they would prevent the eye from being offended to the extent it now is, in almost every lawn and flower-garden. We recommend the perusal of the article on the beauty of lines and forms given in a former Volume; and, to young gardeners, the continual sketching of scenery from nature, and from good engravings.

We can safely affirm, that we have seen very few groups placed on lawn to our satisfaction, either in large or in small places, since we left London. If our article above referred to had been understood, this could not have happened. We conclude it has been read; for the Gardener's Magazine appears to be well known wherever we have called: but it is not enough to present knowledge to a mind, unless that mind has been prepared by previous culture to receive it. We have given sketches at several places where errors have recently been committed, to show the sort of grouping that ought to have been adopted; and we could wish that all young men intended for nurserymen or jobbing gardeners could be made to understand the importance of the subject.

A second grand fault in almost all places, whether large or small, is the manner in which single trees are planted. The number of places which are thus disfigured has astonished us. We have elsewhere observed (*Treatise on Country Residences*) that single trees and small groups are, in landscape-gardening, what the last touches given to a picture are in landscape-painting. By a singular perversity of purpose, where a landscape-gardener has been employed to lay out a place, and form the general outlines of the masses of plantation, the putting in of the single trees is left to be done afterwards, by degrees, by the gardener, forester, or bailiff, for the time being. Every one thinks he can tell where a single tree is wanted, or will look well: "at all events," say such persons, "right or wrong, a single tree cannot do much harm."

It can be no disparagement to gardeners, to affirm that there is not one of them in a hundred who has acquired the sort of knowledge requisite for the purpose of planting what are called single trees. For this purpose, a painter's eye is indispensable; and a gardener may be at the very head of his profession as a horticulturist, a florist, and an arboriculturist; and be, in addition, an excellent botanist, and yet be altogether without a painter's eye.

The principle on which single trees and shrubs, and small groups of these, are planted, is precisely the same as that by which groups are disposed on lawn, viz. the production of a whole, by heightening the effect of the parts which compose that whole. This principle will give the following rules: — First rule: As no single object can form a whole, because the idea of a whole supposes parts which compose it, a single tree, that is, a tree standing completely detached from every other tree, and every other object which rises above the surface, should seldom or never be planted in landscapes where picturesque beauty is an object. A single tree, Mr. Price has observed, is scarcely to be found in nature. In our native woods and forests there is hardly such a thing to be met with as a tree not connected with another tree, or bush, or rock; and, in the landscapes of eminent painters, a tree apart from other trees is, almost without an exception, connected or grouped with buildings or animals. Second rule: As the idea of a whole includes in it, at least, the idea of commencement, progress, and conclusion; or beginning, middle, and end; so the smallest number of trees, or rather of objects, which compose a whole are three. Third rule: As the idea of a whole includes the idea of greater and smaller, no three trees or shrubs, or other objects, should be planted or placed together exactly of the same size, or at regular distances from one another. Fourth rule: As the object of small groups is to heighten effect, they ought never to be planted but with reference to the masses of woods or plantations already existing, the inequalities of the ground's surface, or the situation of buildings, rocks, or water. Fifth rule: Small groups ought to be more frequently planted in front of projecting masses of plantation than in bays and recesses, and more frequently on knolls, or raised parts of the surface, than in hollows. Sixth rule: No small group ought to be so planted as that it might afterwards be moved to the right or left, backwards or forwards, without injuring the scene to which it belongs. Seventh rule: No small group ought ever to be placed in the precise middle of any scene, unless it be avowedly artificial, or the intention be to diminish its apparent size, or destroy breadth of effect. Eight rule: All masses of wood in park scenery, or wherever it is intended to imitate nature in planting, should be composed of aggregations of groups. Ninth rule: Where there are roads, fences, buildings, or watercourses, groups should generally be placed near them, rather than towards the middle of the park or lawn. Tenth rule: In situations of the kind last mentioned, one or two trees are often admissible, as forming a whole with the other objects. Eleventh rule: A tree, with a shrub or a creeper planted in the same hole, will form a better group than two trees planted in the same hole.

We could add to the number of these rules; but we think we have done enough to show the difficulty of the subject, and to prove how thoroughly almost every park and lawn in the country is deformed by the system of dotting, as it is called, at present so generally practised. We were surprised at the extent to which this system has been carried at Alton Towers, Trentham, Chatsworth, Heaton Park, and other places, where we expected better things.

Other faults common to the grounds of most residences, but most conspicuous and offensive in those of small villas, are the depth, nakedness, and spade-marks of the edges to the walks and roads. Many gardeners are not aware that this is a great fault, or we should not find it prevailing in places otherwise respectably kept. It is a fault, because the lines so produced are too harsh and conspicuous, and attract too much attention in the general view. There can be no absolute depth assigned for the edge of a walk, any more than there can be for its breadth: relative circumstances must determine both. Nevertheless, we may lay it down as a rule, that a walk 6 ft. broad, through a smooth lawn, should never have the edges deeper than 1 in.; a 12 ft. walk or road may have an edge 2 in. deep, but not more. The edges, whether of 1 in. or 2 in., should always present a surface of grass, and not of raw earth, as left by the spade. Natural walks, with broken edges, should be rather above the level of the adjoining surface, in order to throw off the water.

The fault we have just mentioned every possessor of a villa may detect for himself; and we may safely appeal to his own feelings, whether adhering to the depth mentioned would not be a great improvement to the appearance of garden scenery. Other faults in the walks and grounds of villa residences we shall leave for the present, and proceed next to notice some in their architecture and disposition on the ground.

Though we are not a professional architect, yet we pretend to as thorough a knowledge of the principles of architecture, as of those of landscape-gardening; and, though the architects who design buildings to our taste are not quite so few as the gardeners who lay out grounds to please us, yet by far the greater number of them are as completely without the painter's eye as are the generality of gardeners. The greater number of even the best architects are the slaves of rules drawn from precedents instead of from principles; and this, indeed, is the great bar to improvement in almost every thing. The fundamental principles of architecture are of two kinds, because its objects are two, viz. use and beauty: fitness, strength, and durability compose the first of these principles; the idea of an expressive whole, the second; and in an extended sense of the word, this principle will include the other. A whole in architecture, as in landscape-gardening, may be regularly symmetrical, or irregularly symmetrical. In the one case, as in the other, the test of success is the production of a whole expressive of the purpose for which it is intended. We shall not here, however, dilate on first principles, but rather proceed at once to the details of our objections.

The first grand error is that of placing houses so that their carriage or main entrance is on the side having the best view. This used to be the practice in building mansions till within the last sixty years; but, being now almost entirely left off in that class of dwellings, we are astonished to find it still lingering among the architects of villas. This is a criticism, like that just made on the edges of walks and roads, that every possessor of a villa can make for himself. He may rely on it, that where the best landscape, whether of the home scenery or distance, is obtained from the entrance hall-door, an error has been committed either in placing the house or in arranging its apartments. It is easy to make a thousand excuses for an error after it has been committed, and to show, by innumerable apparently infallible reasons, that the thing could not have been otherwise than as it is; but one good reason for any thing is enough, and those who feel themselves in the right seldom give more.

A second error, and one which we have mentioned so often that we shall not here dwell on it, is that of having the architecture and the material of two or three sides of a country house different from that of the fourth or best side. It is not uncommon to see a house with an attempt at a handsome front, by the employment of architectural ornaments, and the use of a superior description of brick or stone on that front, while the sides of the same house are not only of an inferior style of architectural ornament, but even of an inferior material. Now, as, in the country, all the sides of a house are alike seen, or nearly so, it is obvious that, as they belong to the same object, they ought to be of the same material, and in the same style. This fault, like the preceding one, is easily traced to street buildings: and too many villas might be readily imagined to be only slices taken from streets. Every detached house in the country ought to bear examination on all sides.

A third great fault in villas is the mismanagement of the chimney-tops: there is not one villa in ten that is not disfigured by them; whereas, being parts essential to every dwelling-house, they might always be rendered agreeable objects. Any attempt to conceal chimneys altogether, in a country where fires are required during three parts of the year, is in bad taste. All additions in the way of chimney-pots, not contemplated in the original design of the edifice, will generally be found to disfigure it. The prevalent evils of smoky chimneys should always, if possible, be cured by an alteration in the throat of the chimney below, by lining the flue in part, or wholly, with metal; or, if an exterior addition in height must be made, it is much better to take down and rebuild higher, or on a different plan, always maintaining architectural forms. In general, whatever is put on the outside of a chimney or stack of chimneys, to prevent smoking, may be built in, or concealed by architectural forms, instead of being set on. Few exterior appearances convey the idea of a house being comfortable within, so much as that of handsome architectural chimney-tops, delivering their smoke without the aid of pots, or earthenware, or iron appendages of any description.* Whoever is of our mind, and intends to build a villa, ought to make it a condition absolute with his architect or builder that there shall be no chimney-pots. This very condition will force the architect to design bold architectural chimneys, such as those used in the days of Inigo Jones, and other architects of that age; and he will always take care that in perspective they group in such a way as shall form a whole.

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* The new part of the palace at Chatsworth has some scores of copper tubes upwards of 6 ft. high, and sufficiently large, as we are told, to let a boy climb into them. They are painted black, and, to our eye, are quite intolerable. We met with no one who could inform us whether Hiort's cylindrical brick flues, used at Buckingham Palace, which are swept without the aid of boys, and are in general an effectual preventive of smoking, have been used. We would try them, or Seth Smith's metallic linings; but, before trying either, we would thrust the tubes down the flues. Supposing neither of these three plans to succeed, we would enclose the tubes in masonry, thus raising the chimneys 6 ft. or 7 ft. If the flues draw now, in consequence of these tubes, they would draw much better when the influence of the external atmosphere was excluded from them.

It would occupy too much space, to go into the faults of architectural details; prevailing ones in every description of edifice are, the use of detached columns as ornaments, instead of component parts; the employment of half and three quarter columns as component parts of walls; and the placing of pediments where they cannot, by any possibility, be the ends of roofs. Tried by these tests, how few buildings are there that will not be found wanting? But this must be the case till architects become not only mechanical contrivers but artists and philosophers. To know what is perfection in any art, it must be tried by metaphysical principles.

With these ideas, it will not be wondered at, that we have left nine tenths of the villas which we have seen, and from the owners of which we have received the most polite attention, praising or approving of what we could; being silent as to faults, unless asked to point them out; but secretly thanking God that we knew something better, and could make very superior things of them. The time will come, however, when good taste in villas will be as common among their possessors as good taste now is in eating and drinking, and in dress; and good architects and gardeners will be as common as good cooks and tailors. All that is necessary, in addition to what is going on in society, is their multiplication.

A first-rate architect (Gandy, we believe) proposed, in one of his early works, that a committee of architects should be formed in London for the purpose of receiving the designs, accompanied by a small fee, of country builders, whether for original erections or exterior alterations, correcting them, and returning them to be executed. The idea we have always thought a good one, because it would, at least, prevent glaring absurdities. In viewing, day after day, since the 24th of April last, the repetition of so many errors, both in laying out grounds and in building houses, it has frequently occurred to us, that, had we but seen the plans previously to execution, we could easily have prevented them. It may be useful to state, that if any subscriber to both our Magazines, who intends to build or lay out grounds, thinks it worth while to send us his plans, free of all expense, we will return them, with our opinion on them, gratis; and if any person, not a subscriber to our Magazines, chooses to do the same, he shall have our opinion for the fee of *5l.* We shall not, for this fee, make any plans: that must be a matter of future agreement; but we shall point out the errors in such a way that their author may correct them, if he thinks fit.

One word as to the management of villa residences; and that is, to recommend the employment of superior gardeners. For the sake of an apparent saving of 10*l.* a year, a gardener is employed who has very little knowledge of his profession, and under whose care half the uses and enjoyments which a garden and villa grounds are calculated to produce are lost. We believe it is very difficult to convince men of this who have become wealthy by habits of rigid economy: they know little difference between a gardener and a common country labourer. Our test for hiring a gardener would be, his being a reader; for, in the present state of the art, it is quite impossible to be a good general gardener without not only the habit of reading, but of reading a good deal. In many places, in the interior of the country, good gardeners are not easily obtained, unless it be from the London nurseries; but it is to be hoped that the number of good gardeners will be every where increased through the instrumentality of the local botanical and horticultural societies. That at Manchester, having a regular school for teaching young men, promises to do much in this respect.

Town Gardens. — Under this denomination we include the gardens and grounds attached to houses in streets, and also the gardens belonging to persons living in towns, but which are detached from their houses; the latter being gardens of culture only.

Of gardens and grounds attached to street houses, it gives us much pleasure to state that we found some entirely to our satisfaction. The richest and most elaborate of these was that of Mr. Edwin Bullock of West Bromwich; the next, those of Mr. Howe, and Mr. Herbert of Coventry; and the next after these, that of Dr. Loudon at Leamington. To these we may add the late Mr. Brookhouse's garden at Warwick, and the garden and grounds of Miss Parsons at Dudley. By the gardener at this last place we were informed that pines grow remarkably well in the immediate neighbourhood of works producing immense quantities of coal smoke. The pines not only grow well, he says, in such situations, but the very considerable quantity of soot which is continually falling on them, and which slides down into the axils of the leaves, effectually prevents the growth of the mealy bug, or, indeed, of any other insect. The health of his plants, and their entire freedom from insects, notwithstanding the sooty appearance of the lower parts of their leaves, seem to corroborate his opinion. The fruit grown, we can assert, is equal in flavour to any we have ever tasted. If this opinion should be confirmed by experience in other places, every innkeeper and confectioner, as well in London as in the country, may grow his own pine-apples on the top of his own house, heating a cistern of water, placed under them, by the smoke of the chimneys. The garden of Mr. Bullock contains a number of the most choice hardy, green-house, and stove plants, besides select collections of florists' flowers. The two Coventry gardens are perfection's self, in regard to order and high keeping.

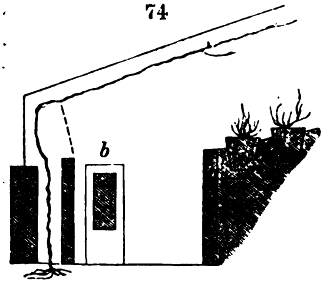
The detached town gardens are situated in the suburbs of towns, generally collected together, and separated by hedges. There are upwards of two thousand of such gardens in the neighbourhood of Birmingham, a considerable number at Wolverhampton, some at Dudley and at Manchester, and a few even in the neighbourhood of that stationary town Buckingham. There are also potato gardens near many of the towns through which we have passed, in which are cultivated only the commoner culinary vegetables, and not either fruits or flowers. The rent paid for the enclosed gardens is generally about 2*s.* 6*d.* a rod; and the extent of ground in each garden is from 7 rods to the fourth of an acre. When a party possessing such a garden is about to leave it, the plants and trees, and the right of possession, are bought by the successor for a price which, at Birmingham and Wolverhampton, sometimes amounts to as high a sum as 60 guineas. Twenty guineas is the usual price given for a garden paying from a guinea to 30*s.* annual rental. It is not uncommon for single men, amateurs, clerks, journeymen, &c., to possess such gardens, and to pass a part of their evenings in their culture. In one of these gardens, occupied by Mr. Clarke, chemist and druggist, Birmingham (the inventor of *Clarke's Marking Ink*), we found a selection of hardy shrubs and plants, which quite astonished us; we shall give a list in a future Number. It were much to be wished that such gardens were general near all towns; as they afford a rational recreation to the sedentary, and a useful and agreeable manner of passing the leisure time of mechanics and workmen of every description. There ought to be no such thing, in our opinion, as a dwelling without a garden, either attached or detached; and, when self-government comes to be applied to towns in a more perfect manner than it now is, arrangements will be made accordingly. In the mean time, it appears to us to be the duty, as it would be for the advantage, of townsmen of wealth, to encourage the laying out of fields in small gardens at moderate rents, for those persons in their vicinity who live in houses or lodgings without gardens. A great drawback from improvements of this kind, as well as from many others, is occasioned by the tenure of landed property, and especially by entails, and church, charity, and corporation lands. No great general improvement can take place in the country, till these tenures are greatly simplified.

Cottage Gardens. — By these we understand the gardens attached to cottages in villages, or to the humbler class of dwellings scattered through the country. In the agricultural district from London towards Warwick they are small and poorly cultivated, in comparison with those around Birmingham and the other manufacturing towns. The cause is too obvious to require explanation. We are not sure, however, that the culture of flowering shrubs against the walls of cottages is so general in the manufacturing as in the agricultural districts. We expected greater progress to have been made among the gardens of the miners in Derbyshire, where we found, indeed, in Middleton Dale, and at Castleton, some cottages without gardens. We recommend this subject to the Duke of Devonshire's agents, and to Mr. Paxton, who might distribute plants and seeds among them. We disapprove, in general, of compulsory laws in matters of this kind; but, if we were to admit of more exceptions to the rule of non-interference than that of compelling parents to have their children educated, as done in some parts of Germany and in America, it should be that of preventing any one from building a cottage or a house who could not add a certain portion of ground to be unalienably attached to it. Before such a law is stigmatised as tyrannical, let us, at least, get rid of the game laws.

Nurseries. — The best collection of house-plants we found in Cullis's nursery, Leamington, where a handsome new conservatory is being planted with a very choice assortment, on an excellent principle for preventing them from crowding on each other, which we shall hereafter describe. The best collection of herbaceous plants which we have any where seen, out of the Epsom nursery, is at Pope's, Handsworth; and there are here above a hundred species of rare articles, of which we have got a list for publication, which are not included in the last edition of the Epsom catalogue. Mr. L. Linnæus Pope is an excellent self-taught botanical draughtsman; he makes drawings of all the more rare plants of the nursery as they come into flower; and his collection has already extended to nearly four quarto volumes. Messrs. Pope are collecting rare trees and shrubs, and will soon plant an arboretum. Taking the nursery altogether, it is highly interesting; and we only regret that it is not better known. The nursery of Mr. Lowe at Wolverhampton, and that of Mr. Cunningham at Manchester, are the freest of weeds which we have seen since leaving London. Mr. Lowe's nursery has always been remarkable for its order and neatness; and we learn from the trade, that it used to be considered the best kept nursery between Edinburgh and London. It is extensive, and fully stocked with forest trees, shrubs, and fruit trees, in excellent condition for removal, and sold at very low prices. The same may be said of Mr. Cunningham's nursery at Manchester, which is remarkably well laid out, and highly kept. The nursery in the worst order which we have seen is that of Weare at Coventry; we were quite astonished to find so much glass, so extensive an American ground, and so many good plants, both tender and hardy, amidst so much broken glass, rubbish, and weeds. We regret it the more, because the foreman (whose name, not having our notes to refer to, we cannot here insert) is an excellent propagator, a reader, and enthusiastically devoted to his profession. We sincerely hope his employer may be induced to allow him the requisite number of men for cultivation and management, and to put the houses, walls, and walks in repair. Such a man, in some situations and circumstances, would be a treasure; but at present he is like a pearl in a dunghill.

Market-Gardens.—The only one that we have seen worthy of notice in this outline is that of Mr. Mist at Perry Barr, near Birmingham. Mr. Mist is a Fellow of the Horticultural Society, a reader, and a strictly scientific, as well as practical, cultivator. His ground being his own, he is trenching and manuring part of it for asparagus, sea-kale, tart rhubarb, horseradish, and other deep-rooting plants, to the depth of 4 ft., in a style which could not be afforded by a common market-gardener. He grows Keen's seedling strawberry to a very high degree of perfection; carries asparagus to market twice in the same day, for the Birmingham dinners at one o'clock, and for the suppers at nine o'clock; and, if he were encouraged by a proper vegetable market in Birmingham, we feel confident he would greatly improve the taste of the consumers of vegetables in that town.

Of Horticultural Practices we have met with several worthy of particular description and commendation; but we shall give only two here, which, we think, ought to be as widely known as possible without delay. The first is the general adoption of a mode analogous to Mr. Strutt's, but more simple and less expensive, of wintering the vines grown under the rafters in pineries. The house is constructed in the usual manner; but, about 1 ft. within the front wall (*fig.* 74. *a*), a 4-inch wall (*b*) is built a few inches higher than the front wall. When it is desired to winter the vines, the front sashes are taken out, fixed on this wall, and made air-tight at top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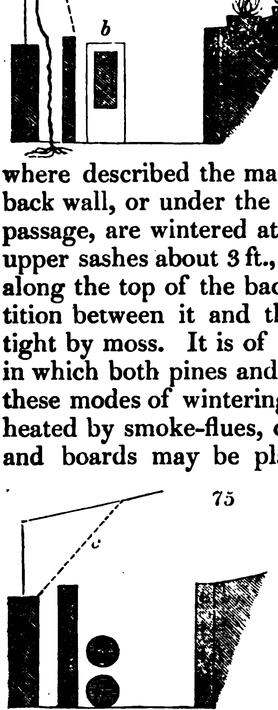
and bottom with moss; while the vines, being taken down from the rafters, are fastened obliquely in the space between the upright sashes in their new position, and the old position of these sashes. The advantages of wintering the vines grown in pineries are known to every gardener. We have elsewhere described the manner in which the vines grown on the back wall, or under the glass roof, immediately over the back passage, are wintered at Kensington, viz. by letting down the upper sashes about 3 ft., and putting hot-bed lights and boards along the top of the back wall of the pit, so as to form a partition between it and the path, rendering this partition air-tight by moss. It is of great importance, to construct houses in which both pines and vines are to be grown, with a view to these modes of wintering. Where houses already existing are heated by smoke-flues, close to the front wall, the front sashes and boards may be placed obliquely (*fig.* 75. *c*), from the inner edge of the front wall to the roof; or, what is preferable, hot-water pipes and a 4-inch wall may be substituted for the flue; the pipes occupying less room than the flue will allow space for the 4-in wall. (*fig.* 75.) A great advantage of the mode of construction by a 4-inch wall between the flue and the front wall is, that the vines may be planted within the house. Another advantage is, that the vines may be taken in to force, or put out to winter, at pleasure, so as to have early, medium, and late crops of grapes in the same house. We saw this exemplified at Hagley and several other places.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The second practice which we shall mention is that of having two kinds of crops always in progress on the same ground. For instance, peas are sown in double rows, at the width of from 6 ft. to 12 ft.; and several rows of different varieties of the *B*rássica family, potatoes, spinach, &c., brought forward between them. Potatoes are planted in wide rows, and the *B*rássica family in rows between them. Asparagus, in like manner, is grown in rows 6 ft. apart, on light rich soil, prepared to the depth of 4 ft.; and onions, turnips, strawberries, and various other low-growing annual and perennial crops *between them*. At Shardeloes we saw asparagus which had been sown in double rows, in thoroughly prepared soil, affording a good crop of heads the second spring. We are aware that none of these practices are new, but they deserve to be better known. The advantage derived from them is founded on the principle that plants, on approaching to maturity, require a greater share of air, and to have a greater surface exposed to the light, than when they are young, small, and comparatively commencing their growth.

Public Botanical and Horticultural Gardens. — That of Birmingham being only just commenced, we can say little about it, farther than stating, that, we trust, when the objects of the garden and the plan that we have given shall be generally known, the garden will be liberally supported, confident as we are that it will afford much gratification, and be of essential use to the town and its neighbourhood. The Manchester garden is far advanced; and though we do not altogether approve of the plan, and certainly by no means of the manner in which it has been planted, yet we have not a doubt that it will contribute materially to the spread of improved varieties of culinary vegetables and fruits, and to the education of a superior description of gardeners. Our objection to the mode of planting is, that it produces a general sameness throughout the garden; whereas, according to our ideas, there should not be one square yard of a scientific garden, with the exception of the turf and the gravel, the same as another; nor should the same species of plant, with a few exceptions in favour of plants of culture, such as fruit trees, culinary vegetables, and florists' flowers, occur in two parts of the garden. In the Manchester garden, as in every other containing an arboretum, the trees which compose it must necessarily be spread over a considerable extent of surface. They form in this garden, as they ought to do, belts, strips, and clumps throughout the whole; and, to shelter and bring up these arboretum trees, a number of others have been introduced among them as nurses. Now, what we object to in these nurses is this, that they are composed of one common mixture throughout the garden. They ought, in our opinion, to have been composed, in all cases, of the same genus as the family to be nursed. For example, there are 30 or 40 different species of oak, one plant of each; these we would have sheltered with the common oak. In like manner, all the different species of the genus *P*inus we would shelter with the common wild pine; the firs, with the spruce fir; robinias, with the common pseudacacia; genistas, with the common broom, and so on. But, in our opinion, shelter is much less wanted than is generally imagined; and, wherever it could be done without in this garden, we would surround the specimen trees with turf, and dig only a circle round the stem, of from 1 ft. to 3 ft. in diameter, according to the nature of the tree. Ultimately, almost every tree and shrub (we do not speak of under-shrubs) of the arboretum will stand on turf; and the sooner an approximation is made to this the better: it will add greatly to the variety and intricacy of the plantations in a picturesque point of view, and be much more convenient for botanical examination. With respect to flower-borders and rockwork, we would adopt precisely the same principle. In the rockwork, we would place every genus by itself in an irregular group; and, instead of having 20 or 30 plants of some showy or very suitable plant distributed all over the rockwork, thus giving it a general sameness of character, we would bring the whole 20 or 30 plants together in an irregular group; thus, where we had beauty in abundance, presenting it in masses. But when we come to publish our plan of the Birmingham garden, together with the plan of the Manchester one, which Mr. Mowbray has kindly promised us, we shall enter into further details. In the mean time, it is but justice to Mr. Mowbray to state that the present plan, which is almost entirely his own, is greatly superior to all the different plans which were sent in for competition; and also that he is open to reason, and, we believe, will adopt our principle of planting in future. We, also, are open to reason, and not wedded to any plan, but only to principles, to which we shall be most happy to publish every objection that can be urged. We were very much gratified by some details in the plan of the hot-houses, all of which have been executed by Mr. John Jones of Mount Street, Birmingham; who, from the great number of excellent structures, which we have seen since we left London, executed by him, we do believe to be decidedly the best hot-house builder in Britain. We were particularly gratified by Mr. Mowbray's arrangements of the back sheds, and the living-room and sleeping-rooms for the journeymen. Mr. Mowbray, having, when a journeyman, lived in the wretched stoke-holes of the Comte de Vandes's garden at Bayswater, and read there in the winter evenings by the light of a furnace-door, is not altogether ignorant of what is wanted in such cases, and of the difference between the services of a man rendered comfortable and of one treated worse than a dog or a pig. We were not less gratified at the manner in which Mr. Jones has heated the houses by hot water; though a number of the garden committee were at first very much against this mode of heating. Mr. Mowbray informed us that last winter the man could make up the fires for the night at five o'clock, without needing to look at them again till the following morning at eight or nine. The houses were always as hot as could be wished, and might have been kept at 100°, if it had been thought necessary. A young gardener, from Mr. Mearns at Shobden Court, who had been accustomed, when there, to sit up half the night, during winter, to keep up the fires to the smoke-flues, was overcome with delight when he came here, and found how easy the task of foreman of the houses was likely to prove to him, as far as concerned the fires and nightwork. We are quite at a loss to conceive how Mr. Paxton can reconcile himself to smoke-flues, with evidence of this kind before him. We mention this, not so much for the sake of Mr. Paxton's hot-house productions, as for the sake of his men, and for the sake of other men in similar cases.

We cannot quit the subject of the Manchester botanic garden without mentioning a few traits of liberality in the parties connected with it; the noble result, as we think, of the influence of commercial prosperity in liberalising the mind. Mr. Trafford, the owner of the ground, offered it for whatever price the committee chose to give for it. The committee took it at its value to a common farmer, and obtained a lease of the 16 statute acres (10 Lancashire) for 99 years, renewable for ever, at 120*l.* a year.* The committee advertised for plans, and not only gave the premiums they promised, but some artists who failed in winning prizes were presented with sums on account of the trouble they had taken. The most liberal donations of trees, plants, and books, have been made by surrounding gentlemen; and Mr. John Smith of the Throstle Nest paper mills, at old Trafford, who has an elevated cistern of water supplied by machinery from the Irwell, seeing a situation in the garden marked out for a fountain, has kindly offered to supply the water, if the committee think it worth while to lay down pipes.

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* The rent paid to Lord Calthorpe for the Birmingham garden, of exactly the same extent, on a 60 years' lease, is considerably more than double this sum. On our suggesting to the committee that they ought to remonstrate with Lord Calthorpe on the extravagance of the rent, considering that the garden would greatly benefit his surrounding estates, we were answered that Lord Calthorpe, being only a life holder, could not let his land for less than the highest price it would fetch, without committing an act of injustice towards his heirs, the estate being entailed. So much for the entail system, which, with the law of primogeniture, will, we hope, be speedily done away with. We detest such excuses. Mr. Trafford has a large family; Lord Calthorpe has neither wife nor child, nor any direct heir. He would not have been guilty of excessive liberality if he had granted the land for nothing. Let him do so still during his lifetime, and the committee will take the chance of what may happen after his death.

Floral and Horticultural Exhibitions. — We were present at that of the Manchester Floral and Horticultural Society, held on the 27th of June, and we must say we have never seen any thing of the kind equally splendid in the meeting-room of the Horticultural Society in Regent Street. We have seen much better fruits in the latter place; but so many large well-grown specimens of hot-house, green-house, and hardy plants in pots and tubs we never saw assembled together before. We were assured by gentlemen connected with the Society, that since its establishment the horticulture and floriculture of the neighbourhood of Manchester have greatly improved. From 500*l.* to 600*l.* a year are given away in prizes; and so eager are even the wealthy to obtain these, that the very newest and most expensive plants are obtained from London with a view of flowering and exhibiting them in competition. The *Botanical Register* and *Botanical Magazine* are eagerly looked over every month for novelties, and the order instantly sent, to insure a supply in case there should be only a few plants to dispose of. We believe that this kind of competition for prizes in the country, and on the Continent, is a main source of support to some of the growers of the more rare plants about London.

Agriculture. — Having passed through the same tract of country for the first time in 1806, with the farming of East Lothian fresh in our minds, we well recollect the impression made on us by the wretched state in which the agriculture of England was, in comparison with that of Scotland. Though we did not now expect much change, except in there being a greater quantity of land enclosed, yet we could not help being surprised at the very slight improvement which has taken place in the implements and the processes of culture. We must except a part of Derbyshire and Lancashire, as far as we have yet seen it: but Hertfordshire, Bucks, Oxfordshire, Warwickshire, Worcestershire, and Staffordshire, meaning the parts of these counties which we have passed through, seem only to have advanced two steps, viz. those of having a more general introduction of clovers, and a somewhat better breed of horned cattle. The same cumbrous implements of every description, large clumsy half-starved horses, shallow ploughing, dirty fallows, and broad-cast turnips, still remain. Will it be believed that we repeatedly saw six horses in a line drawing a heavy wheel plough at the rate of two miles an hour? In only one or two places, exclusive of Derbyshire and Lancashire, did we see improved swing ploughs, turnips on raised drills, or clover mixed with ryegrass; and nowhere single-horse carts, or Finlayson's, Wilkie's, or Kirkwood's improved harrow and grubber; though the improved grubber is an instrument that might work nine tenths of the turnip and naked fallows of England, and one which will sooner or later, and more especially when steam is applied to impel agricultural implements, effect a revolution in the culture of arable lands. Is this, then, the result of the exertions of the Board of Agriculture, and of the 150 county boards that were established all over the country? Yes: and nothing better would be the result if these boards were recalled into existence and continued for another half century. They were mere playthings for the country gentlemen. Instead of boards, if, in 1796, it had been thought fit to establish schools all over the country, agriculture would by this time have reformed itself; the farmers would have found it to be their interest to adopt improved practices, as they did in Scotland, without the assistance of any board. All that the agricultural societies attempted is to be considered in the light of empiricism or topical remedies; but a system of general scientific education would strike at the root of every disease in agriculture, in gardening, and, indeed, in every thing else. Effectually and permanently to advance, we must begin at the beginning, that is, with the rising generation.

Towns. — We cannot help noticing the great increase of Birmingham, Manchester, Stockport, and all the towns we have passed through connected with manufactures. They have not only increased in extent, but improved in their architecture; though in this art they have not advanced beyond the stage of introducing half and three-quarter columns as component parts of walls, entire columns set against walls, and detached columns used as mere ornaments, instead of being useful supports. There are some honourable exceptions; among which we may include the Institution of Arts in Manchester (not yet completed), and the approved design of the town hall at Birmingham. The latter is a Grecian temple, with a colonnade on each side, raised about 25 ft. from the ground, upon a basement story, with a simple roof, like that of St. Paul's, Covent Garden. There is a pediment at each end, supported by two ranks of fluted columns; the sides of the building being supported by one rank above and by a piazza or range of arcade below, as in the Exchange at Paris. The hall will be 130 ft. long, 65 ft. wide, and 65 ft. high. The design is by Messrs. Hanson and Welch, and it is to be executed of marble from the Anglesea mines.* One thing we cannot but regret in these manufacturing towns, viz. the immense quantities of smoke which issue from the engine chimneys. We are persuaded that, by proper arrangements, and a very small additional expense to the proprietor of each engine, the whole of the smoke might be conveyed away by underground tunnels, in which the soot would be deposited, and rendered available for agricultural or other purposes. This alteration may not be worth making in the mining district between Birmingham and Dudley, because it appears that in thirty or forty years the mines there will probably be exhausted, and the country restored to agriculture; but, as the cotton manufacture will probably long be carried on to a great extent in Lancashire, it seems very desirable to introduce a plan for getting rid of the smoke entirely in a short time. From the flue of every fire let there be a small tunnel opening into a large one, and in the small one a fan to be worked by the engine, which should exhaust or draw out the smoke from the fire, and deliver it into the large tunnel, there to find its way over a furlong of watery surface. This furlong need not be in a straight line; it may be in convolutions under the soil of a garden, or under the floors of dwellings or sheds, which it would warm, and it may be in several stories, one over another, the smoke entering at the bottom, and coming out clear at the top. Only let the thing be set seriously about, and it will soon be carried to perfection. Other evils in Manchester are the over heat and bad ventilation of the working rooms. We have pointed out to a humane and rational manufacturer how easily the temperature might be regulated to within the quarter of a degree by the use of Kewley's thermometer; and every one who has seen the application of Sylvester's mode of circulating air in buildings, knows how easy it would be to have a continual supply of fresh air, warmed to the proper degree. The tunnels for depositing the soot might be made subservient to this mode of ventilation, by having cast-iron tunnels within them, by which in winter the entering air would be heated from the cooling smoke. In a word, the more we think on the subject of getting rid of the soot and perfecting ventilation, the more easy does it appear to us. The additional comfort to the inhabitants, not of Manchester only, but of most towns in Lan-

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* A more detailed description will be found in the *Midland Representative*, or *Birmingham Herald*, of June 11.; a weekly paper established on a

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new principle; that of representing the opinions of its proprietors. These are necessarily numerous, as the shares are only 2*l.* each, and no proprietor is allowed to hold more than five. The price will be regulated yearly by the sale: at present it is 7*d.* The principle on which this paper is established seems deserving of imitation. Every trade ought to have its newspaper.

cashire, and the increased health of the work people, and this, too, for ages to come, are surely important objects. The unhappy circumstance of the work people being obliged to labour so many hours a day, and the almost utter neglect of the education of their children, are deplorable evils, which can only be met by improved legislation, especially as to schools, and by combination founded in justice.

The Condition of the Labouring Classes, we certainly think, is, on the whole, improved since 1806. The people seem rather better informed, even in the agricultural districts, and undoubtedly a great deal more so in the manufacturing towns. As to gardeners, with whom we are chiefly concerned, the difference in their favour is astonishing; not merely in their knowledge of gardening, but on subjects of general interest. There is much less drinking, and brutal enjoyment of every description, among every class of country labourers and mechanics than there was in 1806. Labouring men now consider themselves as citizens, with certain rights natural and civil, as well as their superiors; they are capable of acting with more independence, and in concert, with a view of effecting permanent advantages for themselves and their descendants. This good may be referred mainly to the prevalence of peace, which has for fifteen years allowed the working of such education as is to be got by existing schools, newspapers, and cheap periodicals. Next to the establishment of a national system of education, we are firmly persuaded that the greatest good which the legislature could do to the labouring classes, would be to take every tax off paper, printing, and newspapers. Another good would be, a reserve of labour for public improvements, as it has been proposed for Ireland; and a third, facilities for voluntary emigration.

Notwithstanding the general appearance of improvement which we have noticed, the agricultural population every where, and a portion of the manufacturing classes and mechanics round the large towns, are in a state of great destitution. The appearance of the labourers in Buckinghamshire was wretched, we might almost say, in the extreme. We allude more particularly to those whom we saw between Wootton and Buckingham, and between that town and Banbury. Beyond Banbury, near Wroxton Abbey, and, indeed, close to its park gates, there is as wretched a looking village, we will venture to say, as is to be met with in Britain. It may give some idea to a Scotch gardener of the miserable poverty of the inhabitants of this village, and of the low state of the women, to be informed that the present proprietress of Wroxton Abbey lends them a sort of coarse wheel, much ruder than the rudest ever seen in Scotland, to spin with; and when the spinning season is over, these wheels are returned to her, and kept in safe custody in a large room at the Abbey. In the neighbourhood of all the large manufacturing towns there is a number of small manufacturers, who effect by manual labour what large capitalists effect by machinery; just as there were in Scotland, thirty years ago, a few starving small farmers among the large farmers. It is a fact that cannot be denied, that the servants who attend the machinery of the capitalists are better off than the small masters; and the same was the case in Scotland, with respect to the condition of the servants of large farmers, as compared with that of those who farmed small holdings on their own account. Thus it is that there appears to be a tendency in the present state of society to separate producers into only two classes; capitalists and labourers. The labourers, therefore, must necessarily be more or less at the mercy of the capitalists; whether the latter be the possessors of land, money, or machinery. We say nothing here of the operation on monopolies by legislative measures either in progress or in contemplation. There appears to us only one way in which the monopoly on the part of the employers of labour is to be met by the labourers, with a view to prevent it from being injurious to them, and that is, by a counter-monopoly on their part, in the form of combinations to support the price of labour. We shall not here go into the subject farther than to observe that this is not likely to be done to any good purpose, till the labouring classes are better educated, and rendered fit to comprehend and cooperate for their true interests. Were that the case, there would be an understood combination among all of them, as there is at present among some particular classes of mechanics and manufacturers. Even among gardeners this tacit combination exists, and there is not one of them about London, who ranks beyond what is considered in the profession a gardener's labourer, who would accept a situation as master at less than *50l.* a year, with a free house or lodging, and vegetables.* When other labouring classes become as enlightened, and as communicative with each other, as the gardeners, they will follow their example. It is acknowledged by all political economists that high wages are much better for the employer, as well as the employed, than low wages.

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* This is less than the hire of a good footman, but it is honourable to gardeners, and to human nature, that it should be so; and we think they should rather be proud of it than otherwise. The time will come when professions of learning and leisure will be worse paid than those of severe *bodily* labour, watching, and fatigue.

We intended to touch on some other topics, and especially on plantations, roads, and cemeteries; but we defer these for the present, thinking that we may employ ourselves more to the advantage of our readers by proceeding on our journey.

No. 1. *St. Peter's Place, Peterloo, Manchester,*
June 30. 1831. J. C. L.

ART. II. *Remarks on some Gardens and Country Residences in Leicestershire.* By MR. ALEXANDER GORDON.

Sir,

I GENERALLY avail myself of every favourable opportunity to visit as many gardens as I possibly can, being well aware that by acute observation much is to be learned in this manner in a very short period. It enables a gardener to become acquainted with the practice and improvements of others; it convinces him of his own imperfections, and proves a stimulus to activity and perseverance. In conformity with this rule, I have lately visited, with a few exceptions, the principal gardens in this county (Leicestershire), and I now send you a brief account of what came under my observation worthy of notice. I shall here remark, as a hint to others, that I do not confine my researches entirely to the gardens: where practicable, I make a point of seeing and learning every circumstance worthy of observation. Our knowledge cannot be too great, nor the channels too various from which we obtain it.

Belvoir Castle claims the priority of every other seat in this county; it is the princely residence of the Duke of Rutland, and a magnificent castellated structure on the summit of a lofty hill. On the southern slope are enclosed terraces, on which there are several flower-gardens, tastefully laid out, the beds on gravel, and well stocked with choice old herbaceous plants; the whole surrounded by extensive shrubberies. The kitchen-gardens, &c., within the walls are extensive (eight acres). The entrance to the garden is good, built in the castellated style, to correspond with the mansion. The walls are excellent, and now well covered with fruit trees, well trained, and in good condition. There are several good ranges of hot-houses for growing pines, grapes, peaches, &c.; in all of which the crops were excellent, with the exception of the pines. In front of the houses there is a very extensive flower-garden; the beds on gravel: but, although the plan is good, the whole suffers materially from injudiciously filling several of the beds with strawberries and other things better adapted for the kitchen-garden. The greatest fault, however, that I have to find with Belvoir gardens is, that they remain stationary; for, notwithstanding the many very ornamental plants that have been recently introduced to and spread over England, I scarcely saw any of them here; which, in such a place, is what we would of all circumstances be least inclined to expect. As far as neatness and keeping go, they are in good order, and do Mr. Buckwell, the gardener, the greatest credit.

The park is of great extent, and contains very thriving plantations. I saw some young oaks remarkably fine. The views from the castle are extensive and various.

I was favoured with a sight of the interior of the castle; but here my description must ever fall short; for my imagination had not dared to form the most distant idea of the magnificence and splendour of its furniture and decorations. In the picture gallery there is an extensive collection of valuable paintings. Among the celebrated masters who have contributed to this invaluable collection are Poussin, Carlo Dolci, Guido, Claude Lorraine, Salvator Rosa, Murillo, Rubens, Teniers, and Reynolds.

Taking Belvoir as a whole, when we consider its most romantic situation, upon an abrupt eminence on a kind of natural cliff, forming the termination of a peninsular hill, well turfed by nature and art, and varied into terraces of different elevations; the upper part, as before remarked, formed into neat and elegant flower-gardens; the lower abundantly covered with forest trees to a great extent; the views comprehending the whole vale of Belvoir, and the adjoining country as far as Lincoln, including twenty-two of the Duke of Rutland's manors; the castle itself, with the splendour and magnificence of its interior, and its admirable collection of paintings: I say, these things considered, it presents the person who possesses the smallest portion of taste or discrimination with such a treat as few places in England can supply.

Laund Abbey; Mrs. Simpson. — In a sequestered spot on the borders of Rutlandshire, once a priory of canons of the Augustine order. There is a small chapel attached to the house, in which lie the remains of Gregory Lord Cromwell, to whose memory there is a monument. The original burying ground, now an ornamental shrubbery, is occasionally used for interment; the kitchen-gardens are very good, and contain what every garden ought to do where practicable, a good supply of water. There are several very excellent glass houses, in which the grape vine is cultivated in the greatest perfection.

Between the house and kitchen-garden there is a piece of stagnant water, which, I presume, is intended to be ornamental, but is, in my opinion, a perfect nuisance.

Quenby Hall, the seat of Wm. Ashby Ashby, Esq. — About two miles to the N.W. of Billesdon. A substantial, large, commodious building, in the style called Queen Elizabeth's Gothic; consisting of a centre, with a large lofty hall, and two side wings projecting from each front. Around the house is a terrace, which commands a great variety of prospects; on one side very extensive views over a distant hilly country, and even to the mountains of the Peak; on the other side a beautiful landscape of hanging hills, with scattered woods, shelving in a winding valley. But its principal attraction for a gardener is a most beautiful specimen of the cedar of Lebanon, now growing about 150 yards from the front of the house. This tree was among the first of that species introduced into this country; the seeds from which it was grown being brought from the Levant by Mr. Wm. Ashby, a Turkey merchant, and given by him to his nephew, George Ashby, Esq., called by Evelyn "honest George Ashby, the planter," who is supposed to have planted this tree between 1680 and 1690. There were originally nine or ten trees of the same age growing at Quenby, which Shuckburgh Ashby, Esq., on purchasing the estate of another branch of the family, in 1759, found in a flourishing state, but somewhat crowded by other trees. Desirous of rendering such fine and curious objects more conspicuous, he cut down the other trees that stood near them, when all but the present one died in consequence of this unfortunate exposure. A sketch of this tree was taken by a Miss Watts on the 24th of July, 1801, from which she afterwards finished an elegant drawing, and also wrote a poem, in which she makes the present tree address its departed compeers. In the maginal notes of this poem, which I was kindly allowed to peruse in the library at Quenby, I find the measurement then (1801) to be as follows: — Height, 42 ft.; girth at 2 ft. from the ground, 14 ft. 2 in.; girth, at 8 ft. from the ground, 12 ft.; length of the longest branch, 30 ft. It then covered about 267 square yards, and contained 180 cubical feet of timber. I consider the tree to be now in a decaying state; in fact, several large limbs have been cut off since I first came here (only two years). There is a most luxuriant one growing at present in the kitchen-garden, and a great many smaller ones. The gardens are quite neglected, in consequence of the family not having lived here for many years past.

Carleton Curliew, the seat of the Rev. Henry Palmer. — A curious old Elizabethan mansion. In the front are three projections, with three tiers or stories of windows, and terminated at the top with escaloped pediments, similar to the street front of the University College, Oxford. The gardens small, but very neatly kept, and a very good collection of Geraniàceæ and herbaceous plants.

Wistow Hall; Sir Henry Halford, Bart. — About two miles north-west of Kibworth Beauchamp. The mansion is built of brick, encased with stucco, and has, in the principal front, fine gable pediments. The principal room is a large lofty hall, extending nearly the whole length of the building. Attached to the mansion is a new conservatory, the architecture of which corresponds with the house, forming a termination to a numerous suite of apartments. As a continuation to the conservatory there is an admirable telescopic vista of about 300 yards in length, and 12 ft. wide, formed by most luxuriant common and Portugal laurels, &c.: at its greatest extreme from the house there is a beautiful weeping ash, 130 ft. in circumference, under which there is a very good seat. The grounds are level, and consequently devoid of that interest which a varied and undulating surface in general possesses: but art has done much, and, as a whole, Wistow is a very attractive place. The flower-garden is extensive, and well stocked with choice plants, among which there are several of the most choice and valuable recent introductions. The kitchen-garden has one very great fault; it inclines to the north, but the crops were good, and the trees healthy. There are several good houses, and the crops of grapes were excellent when I saw them last (April 25.); the peaches the same. There is a very good collection of stove plants, in a very clean, healthy, growing state. The whole concern does great credit to Mr. Dott, the gardener, who has had the management of it for fourteen or fifteen years. Lady Halford is very partial to rare birds and animals, of which she has a very good collection; gold and silver pheasants, the finest I had ever seen; a very fine emu, and several kangaroos.

From Wistow I went to Stoughton Hall, the seat of G. L. A. Keck, Esq., late M.P. for the county. Stoughton is situated about three miles S.S.E. of Leicester. On my way here from Wistow I was gratified to see several poor people busily employed in planting potatoes, &c., on portions of ground which had been for some time allotted them by Mr. Halford, son to Sir Henry. I entered into conversation with them, and I feel great pleasure in stating they were fully convinced of the benefits they enjoyed, and felt truly grateful for Mr. Halford's kindness. It was a clear enclosed field, about 7 acres, portioned in lots of one quarter of an acre to each family, and divided only by a green verge. They were charged at the rate of 6*s.* or 6*s.* 6*d.* per quarter of an acre. But to

Stoughton Hall.—It is a large, spacious mansion; but I did not enter it. No expense has been spared in forming the gardens. The walls are flued and wired; but Mr. Frost, the gardener, by no means approves of wiring the walls: he complains of it on various accounts; among which, he said, neither fruit nor wood ripens so well, and he finds the wire very injurious to the young shoots. At other places, where the wire system was adopted, I heard it complained of for the same reasons. The situation of Stoughton is low, and the fruit-tree borders have suffered severely from excessive moisture. Mr. Frost last winter made a drain the depth of the wall's height under the walks in front of the borders all round the garden, and the trees are evidently in an improving state. There is a very spacious conservatory here, and a superior collection of the Geraniàceæ. Mr. Keck is a stanch supporter of the game laws, and his fields exhibited a convincing proof that he supports them practically as well as theoretically. This brings me to Leicester, where the principal place deserving of notice to a horticulturist is

Leicester Abbey. — Leicester Abbey was formerly of great local importance: it was founded in 1143 by Robert surnamed Bossu, who was buried here; and it acquires considerable interest from having been the scene of the death of Cardinal Wolsey, who expired here Nov. 29. 1530, on his journey from York to London. The remains of the abbey, with its ancient walls and grounds, are now in the possession of Mr. Warner, and the grounds are occupied as a nursery and market-garden. The grounds are very extensive, and Mr. Warner grows good articles in the various branches of his profession. He is a gentleman of liberal-minded principles, spares no expense, and from experience I can say his prices are equally moderate with any in the kingdom. His collection of tulips is very extensive, and he purposes planting this season an acre with georginas alone.

There are several gentlemen in Leicester very much given to botanical and horticultural pursuits, and regular readers of the Gardener's Magazine. Among those who are the greatest patrons of gardening by example, I may name Mr. Brewin *, who has several good houses, one a curvilinear house, and an excellent collection of plants, remarkably well grown. Mr. Burbridge, town clerk, has a good garden, which contains several hot-houses and a most elegant grotto, formed of a peculiar kind of stone from Derbyshire (I believe), and richly ornamented with valuable shells and stained glass.

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* This gentleman's most worthy and excellent father was also a cordial patron of botany and gardening. When the botanic garden at Bury St. Edmund's was opened in 1820, he happened to be in that town, and gene-

Mr. Morris, surgeon, has a very neat little spot, and the whole exceedingly well arranged; in fact, for the short time I was there, I find myself incompetent to do it justice. It presents us with *multum in parvo,* and, although not so well stored with botanical productions, it forcibly brought to my recollection the gratification I experienced in the little spot of my friend Dr. Wray of Augusta, in the United States of America. (See Vol. IV. p. 464.) Mr. Morris has adopted Mr. Byers's brick wall for strawberries (Vol. V. p. 437.), and highly approves of it.

Mr. Musson, the Governor of the County Gaol, has rather an extensive garden. The walls are new, and the young trees looked remarkably well: they are pruned on just principles, and the ground judiciously cropped.

Birstall Hall; J. Mansfield, Esq. — About three miles north of Leicester. The gardens on a small scale. The vines are grown here in a very superior manner, and had then (April 26.) a most beautiful crop and nearly ripe. The garden walls are built on a very bad plan; a niche, the top of which is a segment of a circle, being formed for each tree; and as the trees are confined within the niche, there is consequently a deal of good wall quite lost.

Wanlip Hall; Lady Palmer. — About four miles north of Leicester. A brick mansion, stuccoed, and fitted up with great taste. Here have been found a tessellated Roman pavement, several coins of Constantine, broken urns, &c. The pleasure grounds derive a great advantage from being embellished by the river Soar, which runs within a short distance of the house. The garden walls are built of clay and wired. There are some glass houses, the crops under which were very indifferent, and those in the frames the same.

Prestwould Hall; C. J. Packe, Esq. — About twelve or fourteen miles north-east of Leicester. A large modern mansion, the gardens rather confined, and their principal characteristic feature is the superior mode in which the pine-apples are grown here: I never have seen any pines to excel, and few to equal them; they do the greatest credit to Mr. Brown, the

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rously volunteered a contribution of hardy herbaceous plants to the incipient garden from his own; and, on his return to Leicester, sent off two hampers filled with plants, with offers of many more. — *J. D. for Cond.*

gardener, who has managed them for twenty-three years. The park is finely wooded, and the young plantations, which are very extensive, are doing remarkably well. One feature in the management of those plantations is peculiar to Prestwould, as far as my observations have yet extended in Leicestershire, viz. judicious thinning and pruning. So much has been written in your pages on this important subject, by men so much abler in talent, and more experienced in practice, that I shall only add that the plantations at Prestwould, when compared with others in this part of the country, form the most convincing proof, if proof were wanting, of the great benefits attending a regular and systematic method of thinning and pruning, from the original planting, to the full perfection of the timber.

Burton Woulds; C. G. Mundy, Esq.—The grounds varied and extensive, but, with the exception of a flower-garden near the house, the pleasure-grounds, when I saw them (April 26.), in very bad order. Some good bearing trees in the kitchen-garden, and the earliest crop of melons I had seen in the county, with the exception of Belvoir. Adjoining the house there is a very neat and well-constructed grotto, tastefully decorated with rare and valuable shells.

Whatton House; — Dawson, Esq.—About four miles to the north-west of Loughborough. A small house, but from the upper rooms there are some good views. The kitchen-garden is good, and contains some good forcing-houses. The park good; but the pleasure-grounds confined. In the centre of them there is an ice-house, which Mrs. Dawson has ornamented with rockwork. It has a good effect, with the exception of the entrance, which is not properly concealed, and consequently exposes the delusion it must have been intended to create.

Garendon Park; Thomas March Phillips, Esq., now M.P. for the county.—Two miles north-west of Loughborough. On the site of the present mansion was formerly a rich abbey of Cistertian monks, founded in 1133 by Robert Bossu, the good Earl of Leicester. There is an elegant gateway in the park, in imitation of a triumphal arch, built by Ambrose Phillips, Esq., an ancestor of the present possessor. There is a very large garden in front of the house, principally dedicated to fruit trees, hot-houses, and flowers. One of the walls is now partially covered with magnolias and other choice plants: it is intended, as the fruit trees die away, to fill their places with those and the like choice shrubs. There is no method in the range of glass houses. Their form, dimensions, and exposure, are all different, and, as a whole, have a bad effect. The walks in this garden are very wide and of grass. Three radiate from a summer-house at the south side of the garden, which from that point have a very good effect. The pleasure-grounds are extensive, and contain some excellent Portugal and common laurels, and American plants. There are also some good old plants in the hot and green houses; amongst them a particularly fine *A*càcia armàta.

Barkby Hall; George Pochin, Esq. — Four miles north-east of Leicester. The gardens large and good, with a most excellent range of glass; but it presents a great sameness, from consisting of attached houses with an even and unvaried surface. This range fully justifies your remarks in the *Encyclopædia of Gardening*, where you recommend detached houses for general use. A conservatory has lately been built which will contain a great number of plants for its size, and will no doubt grow them well; but I think effect has, for such a house, been too much sacrificed to utility. It is by far too low, and the roof decidedly too flat. When I last saw the grounds, about three months ago, several alterations were going forward, which, in my opinion, will considerably alter the features of the pleasure-grounds for the better. Mr. Cadny, the gardener, is a most excellent grape-grower, and has a volume in preparation for the press, descriptive of his system, and also of a new pit for cucumbers, with a span roof, which he has invented.

Baggariff Hall; Capt. Burnaby. — About nine miles E.N.E. of Leicester. Several very favourable situations for American plants; some of the best sorts of which have lately been planted here. Near the house is a good piece of water; but the gardens, for want of assistance, very badly kept up.

Before I give you a description of the grounds at Lowesby Hall, allow me to record the name of a most indefatigable collector of plants in this immediate neighbourhood, *Mr. Francis Needham of Hungerton*, who is well known to almost every gardener in the county, as an amateur in the art of gardening, and in the science of botany. He is persevering in collecting and liberal in distributing, and would he only adopt a regular system in his arrangements, and display a little more neatness in his garden, his exertions would merit, and no doubt obtain, the approbation of every sincere lover of gardening.

Lowesby Hall, the seat of Sir Frederic Gustavus Fowke, Bart. — A venerable old building, situated in a good park, the undulating surface of which adds much to its beauty. The pleasure-grounds have within the last twelve years been very much extended and improved. The present spirited proprietor, being particularly partial to landscape-gardening, and favoured by the natural surface of the grounds for a proper distribution of wood and water, has been enabled, by judiciously laying out the whole in a proper manner and on just principles, to render it one of the most picturesque places in the county. The gardens and pleasure-grounds, &c., have been under my superintendence for two years, during which period very considerable alterations have been effected, principally at my suggestion. Last autumn I formed a new kitchen-garden; by which I was enabled to make a considerable addition to the already very extensive pleasure-grounds; a portion of which I have converted into two flower-gardens, where I principally adhere to the massing system in the different beds. I shall probably send you a plan of the flower-garden at a future period: and, although it does not exactly meet the approbation of my employer, he has generously allowed me to pursue it, in order that I may have a fair opportunity of displaying what I consider its intrinsic merits. My kind employer has also given me permission to dedicate a necessary portion of ground for a natural arrangement of herbaceous plants. I have also replanted a considerable portion of the shrubbery, with large shrubs, *en masse*, and from their size I was enabled to produce an immediate effect, which has considerably added to its merits in my (previously favourable) estimation. In the summer of 1829, I built a very extensive brick wall on Mr. Byers's system, for strawberries. (Vol. V. p. 437.) The plan has my most unqualified approbation. I never have seen such a crop as my own wall does this day (June 14.) exhibit. Its earliness and cleanliness cannot be too much extolled. I shall only add, that since it has been built it has never been touched, with the exception of cutting runners and dead leaves away; and, as the crop is far superior this year, I consider Mr. Byers's recommendation of planting every year to be decidedly wrong.* My cucumber and melon and pine pits are on West's plan, which plan, from my then experience of it, I condemned to the inventor personally, some five years ago; and, as this experience has now been much more extended, I feel justified in saying his pits cannot be too much repudiated. The attention invariably required in the frequent supply of dung is troublesome in the extreme, and the manner in which they exhaust the manure renders them a complete robbery on garden and farm. They present a degree of neatness; but, as far as my experience goes, not one word more can be said in their favour.

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* It will be seen by turning to p. 507. that Mr. Byers does not consider annual planting indispensable. — *J. D. for Cond.*

For the present, here ends my feeble description of the gardens in Leicestershire; but, should this meet your approbation, I shall willingly use every effort in my power, to communicate the particulars of those gardens in this county which I have not yet described, and may consider deserving of notice. I am, Sir, yours, &c.

Lowesby Hall, Leicestershire, ALEXANDER GORDON.
June 14. 1831.

WE shall be happy to receive a continuation of these remarks, because we consider them well calculated to stimulate both gardeners and their employers. We know nothing so improving to a master-gardener as visiting other gardens. We are at this moment (Manchester, June 22.) on a tour in search of improvements, and we find it not less advantageous to a reading and writing gardener than it is to a practical one. Future notes of what we have already seen, and hope to see, will, we trust, prove this. — *Cond.*

ART. III. *A short Account of Nonsuch Park, near Epsom, the Seat of the late Rev. Joseph Whately, as it existed about the Year* 1786. Communicated by the Rev. W. T. BREE, A.M.

Sir,

THE following descriptive sketch of Nonsuch, which I have extracted from a letter lately received from my friend, the Rev. Thomas Whately of Cookham, I think may prove interesting to the readers of the Gardener's Magazine on more accounts than one. In the first place, it will serve to show how far taste, judgment, and ingenuity will go towards rendering beautiful a situation in itself entirely destitute of beauty and natural advantages, and of almost all the component elements of the picturesque; for such, it appears, was Nonsuch, previously to its undergoing the alterations introduced by the art of the landscape-gardener. Secondly, the spot described may be considered as *classic* ground, having been the frequent retreat of the late Thomas Whately, Esq., author of *Observations on Modern Gardening*, and brother of the then proprietor. And, what is more, much of the beauty of the garden and pleasure-ground was, in all probability, the result of his taste and genius; for, I am informed, he was at his brother's right hand when the improvements in the garden were made; and no doubt confirmed with his approval, if he did not originally suggest, many of the alterations. The place, therefore, as described below, may be considered, at least in great measure, as the work of Thomas Whately, and may serve as a practical illustration of those principles of the art, which he has so well laid down in his incomparable treatise on *Modern Gardening*. Let it be remembered that the following brief sketch applies to Nonsuch as it *was*, not as it *now is*. The property has some years since passed out of the Whately family; and the whole place, I am told, has now undergone an entire change in the arrangement of its garden, plantations, buildings, &c., *the old house* having been pulled down and a large modern mansion, erected in its room by the present proprietor, —— Farmer, Esq. Not being acquainted, however, with the seat, I shall not attempt to describe it, but shall leave to others the task of drawing comparisons between its present and former appearances, and the respective merits of each.

Yours, &c.

Allesley Rectory, April 5. 1831. W. T. Bree.

THE great beauty of the garden at Nonsuch consisted in the exquisite taste displayed, and which created a most delightfully interesting scene of great variety, without the assistance of wood, water, undulating ground, or prospect. The place in itself, indeed, is really ugly. The house was particularly ill calculated for the purpose of adding any thing of interest to the scene: it was a long, low, red building, with eleven heavy sash windows in a row, and the same number above. From the east corner of this south front a high wall extended to a considerable length, with a pigeon-house and stable at the end. To add to its disqualifications, it was enclosed within walls (courts), planted round with formal rows of trees. These trees were made to produce a happy effect, by drawing the middle one of one of the rows forward about 50 yards; by which means the line was so effectually broken that no one could be brought to believe a line had ever existed. The same effect was produced on the other side by planting shrubs before it, and towards the end uniting it to some other trees by judiciously scattered small trees. In front of the house was a large lawn, interrupted about half way by a chalk pit; the front of which was shelved down, and the back so planted as to give the effect of beautifully undulating ground in front, and thick sheltered wood behind. The interest created by this chalk-pit arose in great measure from the very skilful manner in which different channels were made to fall into one another; so that no slope was tame, but each was so contrived as to appear the natural result of time or old watercourses. A happy effect was produced by the attention paid to the tints of the trees, which blended in a delightful manner. I was delighted with this beautiful spot from my childhood; and can remember the conversations of Gilpin[*], Sanxy[†], Parkhurst[‡], Masyres[§], and others, who would stand upon the lawn for hours, talking of its various beauties, with my father, who was himself the greatest ornament of the scene. The bourne*, which rose in the chalk-pit, was connected with one three miles off on one side at Epsom, and another two miles off on the other side at Lower Cheam; the water rose after a wet season: I remember to have seen a considerable quantity of water in the pit twice in my life; a circumstance which we considered a great misfortune, as it converted the hollow into a pond. T. W.

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[*] The Rev. William Gilpin, of picturesque memory.

[†] An eminent surgeon, the Astley Cooper of his day.

[‡] The Rev. John Parkhurst of Epsom, author of a *Hebrew and English Lexicon*, and of a *Greek and English Lexicon to the New Testament*, &c. &c.

[§] Baron of the Exchequer, who lived at Reigate; a man of very extensive learning, particularly in the mathematics.

ART. IV. *Outlines of a Plan for the Formation of a Classical Garden.* By Mr. J. MAIN, A.L.S.

Sir,

BRITAIN ranks high in the scale of nations; and not more for her power and commerce, than for her exertions in the advancement of every art and science, within these last fifty years.

Architecture has raised, and is raising, monuments which will remain for the admiration of ages; sculpture, painting, and all the liberal arts, are advancing in rapid progression. The stupendous national undertakings to promote the convenience, the safety, and the comforts of society, and the noble institutions for the advancement of every kind of useful and elegant knowledge, merit the applause, and receive the eulogies, of surrounding nations. Nothing seems too great or expensive for the genius and affluence of the empire to accomplish; and nothing which can add to its fame or its splendour is neglected from indifference, or forgotten from want of public spirit.

But, among these astonishing works of national aggrandisement, one thing has not yet been taken up with that ardour it deserves, nor on the comprehensive scale of execution of which it is capable; namely, the formation of what may be called a Classical Garden. For, notwithstanding this art has received the attention of the wisest heads, and engrossed the cares of the brightest and most rational among mankind; and though the *utile dulci* of the ancients has been eminently displayed in many instances around the palaces of the princes and noblemen of the European world, during the last century; yet these gardens, whether an appendage to a palace, the requisite accompaniment of a country seat, or the ornament of a villa, partake, for the most part, of the same mixed character, differing only in extent: and admitting that in all private gardens this must necessarily be so, still, even in botanical collections, is there to be seen any other arrangement than what the climate of this country imposes, or what the peculiar nature of some plants requires?

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* An occasional spring, which flowed only at distant and uncertain periods.

A systematic arrangement of plants, whether on the Linnean, or according to the Jussieuean or natural orders, can hardly be expected to be made; because of the almost infinite numbers included in the genera, species, and varieties of the vegetable kingdom, their various habitations, and natural differences. But to approach as near as possible to a natural classification, our collections, whether for the amusement of the amateur, the information of the student, or for what is most essential of all, the rural economist, should be so arranged as to juxta-position, that the spectator may not only see the variety and beauty of vegetable productions, but also, at the same time, their natural stations on the face of the earth. To accomplish such an object as this, would certainly be worthy of the taste, the wealth, and the refinement of the age.

It is true, all gardens cannot be so laid out; but, in what may be called national gardens (such as have been and are now forming in different parts of this country), such a plan should be adopted as would bestow upon them a classical character. To accomplish this, the following ideas are thrown out: —

Granting that a choice of site and aspect is obtained, let the form of a parallelogram (its longest sides facing nearly S. S. E.) containing from six to eight acres be fixed on. Let this be divided longitudinally and equally; then divide the whole transversely into five unequal, or geographical subdivisions, representing the five zones of the terraqueous globe. The arctic and antarctic may be but narrow slips: the torrid or centre subdivision may be not less than 150 yards; and what remains on each side of this will answer to the north and south temperate zones. These will form the habitations of all vegetables which have been or may be collected from every part of the world.

Let the most northerly grand division of the ground be appropriated as the botanical part; along the middle of this, let the principal walk, terminated by the grand entrances, be laid out. Beginning at the western entrance, pass through an arch of rustic rockwork, formed of the native rock of the arctic circle, or from as near to it as can be brought home by the northern whalers. In the interstices of this structure let every plant indigenous to the hyperborean shores be planted: the various lichens, mosses, &c.: organic remains, whether fossil or not, may be added as part of, or fixed on, the exterior; such as whale bones, testacea, horns of the elk, &c. A thickly planted row of the *Pìnus Ábies*, or of the Scottish pine, may be the line of division between this and the next subdivision, answering to the northern side of the north temperate zone; and here, on each side of the walk, let there be planted in amphitheatrical order, the trees, shrubs, and herbs natives of the corresponding parts of the world. This order of planting and arrangement must be continued throughout the whole length of the garden, with this observance, that, in order to produce variety, the turf on each side of the walk must be carried, in irregular sinuations, into the planted ground on either side, and on which, at proper intervals, may be planted the most conspicuous, useful, or beautiful specimens of indigenous plants of the corresponding latitudes. Proceeding eastward, and approaching the eastern side of this subdivision, its native plants will require a glass case to preserve them during the rigours of our winter. Here let us enter a Gothic conservatory, of such amplitude as will agree with the general extent of the garden, and suffice to contain the best of the plants which usually require a place in our green-houses. This building must, in its span, include the principal walk: its structure is, perhaps, of all others, the most suitable, from the facility it affords of arranging the glazed lights, its buttresses with their pinnacles as uprights, the flying buttresses as rafters, to support (assisted by interior columns) the middle or highest part of the roofs; two or three of the buttresses behind doing the office of chimneys. This erection, whether when the lights are on in winter, or when off in summer, will always present a pleasing architectural object.

Leaving this conservatory, and at the distance of a few yards from it, we may pass through a Grecian arch, flanked by a barrier of rockwork, formed of geological specimens from the latitudes of from 20° to 23° north. This arch may be enriched and made interesting by a display of sculpture, emblematical figures, costumes, &c., of the inhabitants of Greece, Persia, and northern India: the ends of the barrier may be concealed among the shrubs and trees at each end.

We next enter the central subdivision, intended for plants of the torrid zone; and here, from a luxuriant thicket of evergreen trees and shrubs, let the mosque with its ample dome swell into the sky, surrounded by its corridor, ornamented by its minarets, and backed by a pyramid to do the humble office of a chimney. Such a building will be a characteristic receptacle for the lofty palm, the magnificent plantain, and all the other vegetable children of the sun. Its dimensions should be sufficiently roomy to allow a well selected collection of the most beautiful and curious tropical fruits and flowers, to arrive at the greatest perfection. A great command of artificial heat will be requisite, but not more than can easily be obtained from well constructed flues, and the newly invented modes of heating by hot water, supplying heated air, whether moist or dry. The space immediately in front of the building should partake of its semicircular sweep, having a basin and jet d'eau in the centre; and, in the summer months, should be furnished with every plant and object occurring within the tropics; the vestiges of Egyptian and Arabic ruins, embedded in banks of sand, &c. Evergreens only should have place in this portion of the garden; and, instead of tropical forest trees, those of America and Europe must be substituted. The tallest of the pine and cedar tribe must form the back ground, and they should be kept pruned up, to form palm-like heads, to associate in character with the building.

From this subdivision we pass through its eastern boundary, and under a piece of masonry, representing an ancient aqueduct or some other piece of Oriental architecture, embossed with sculpture, or marked with hieroglyphics, and then enter on the confines of the southern temperate zone: and here, passing for a little way through the hardiest plants found in either clime, we approach the next building, which may be a Chinese conservatory. Its structure, ornaments, colouring, and its beautiful plants both within and without, wholly Chinese; a pagoda at each corner behind, serving as chimneys, will mark its character, and enrich the scene. This building, like the others, also spans the leading walk, and may be of corresponding length to the other conservatory already described. In this, not only Chinese shrubs, but also trees which are equally beautiful, may be brought to a perfection never yet seen in this country.

Leaving the Chinese conservatory, and proceeding onwards, we may see the hardy plants of the southern temperate zone disposed according to their respective latitudes (those of South America, Southern Africa, and Australia, many of them not yet naturalised, forming the eastern collection); and then, passing a line of pines, enter the region of the antarctic circle, which may be similarly furnished with a rockwork entrance, and hardy plants, &c., as is the entrance at the opposite end; as it is likely that no plants, nor even geological specimens, have yet been procured from that unexplored quarter.

To complete the number of requisite buildings, and concentrate all the exotic vegetable beauties, an orangery of light Grecian architecture facing the Gothic conservatory on the one side, and an ornamental green-house for South African and Australian plants, facing the Chinese conservatory on the other, would be necessary; these, together, would contain a collection sufficient for every purpose required in such an establishment.

Along and within the northern wall or boundary, which should be concealed by a thickly planted shrubbery, an avenue the whole length should be planted: this, when properly gravelled, would be a most agreeable mall, or promenade, for meditation or exercise, in the summer months.

Basins of water warmed by the flues should be made in each of the houses; as well as in different parts of the subdivisions, for the reception of aquatic plants; many of which are extremely curious and beautiful.

The other or most southerly grand division of the garden is intended for the cultivation and display of all plants fit for the use of man or beast; viz., fruits, grain, pulse, herbs, and roots, whether for the use of the apothecary, the cook, the confectioner, or the dyer; together with the artificial modes and means of forcing fruits, &c.: and though the whole of this department might be dispensed with in a garden attached to a university, yet in a national establishment it should, as being the most useful, be arranged and conducted on the most ample and judicious practical processes; not only for perfecting our practice, and the stock of our kitchen-gardens and orchards, but also for ascertaining the most valuable, and introducing new varieties, for the improvement of our present collections.

Should such a garden as this, which is capable of receiving much more embellishment than is here noticed, be carried into execution, how amusing would be a visit to, or walk through, this living panorama of plants, this varied assemblage of vegetation! To the naturalist, how delightful; to the artist, how useful; to the botanist, how convenient; to the amateur, how interesting! and the man of business, where could he find such a retreat for rational and pleasing recreation?

I am, Sir, &c.

Chelsea, April, 1829. JAMES MAIN.

Art. V. *On the Food of Plants, and on training Fruit Trees.* By Joseph Hayward, Esq., Author of "The Science of Horticulture," "The Science of Agriculture," and other Works.

Sir,

In my last (Vol. V. p. 394.) I endeavoured to call the attention of your readers to the important object of establishing the practice of gardening on the tried principles of science. It is evident that clear definitions are the fountains of science; and to show that nothing can be more opposed to the establishment of science than the incongruous use of undefinable terms, we need only refer to the confusion occasioned by the use of the term *manure*. To avoid this, in my first essay on the food of plants, I explained the means by which chemists had come to the conclusion, that the pabulum or nutritive principle does not necessarily form a part of the earth, but is a substance which may be abstracted from it, or imparted to it, by the agency of the vegetable and animal part of the world; and which substance is called carbon: and, as it is known that without some other active principle in nature carbon is often inert, I explained the objections which led me to conclude that alkaline salts, or their bases, form the active principle. I will now, with your leave, explain some other conclusions which I have come to, from the observations I have made on the effects of the quantity and quality of food consumed by plants.

From the little that has been understood of the science, many of the most common terms used in horticulture are vague and uncertain, and the terminology is altogether inadequate to the explanation of our ideas. We are therefore obliged to resort to analogies, and to the use of those terms that in a strict sense may be applicable to animals only: thus, when speaking of the food of animals, we mean solids, as we know that they require drink besides; and, as plants cannot take any thing into their bodies but liquids, the term food may appear inapplicable, yet by no other familiar term can we convey an idea of the substance by which the nutritive principle is to be conveyed. It may be said that the food of animals cannot be nutritive until digested in the stomach; and that plants have not stomachs for the reception or digestion of solids. True; but as plants are stationary, and compelled to receive their food through the agency of the earth, we may consider the earth as performing the office of the stomach for plants. As the food of plants, from whatever substances derived, must be reduced to a soluble state, and duly blended and diluted with water; and as the reduction and preparation must be conducted on or in the earth, we may consider these operations as analogous to digestion: and just as the earth possesses the requisite qualities for digesting and distributing the carbonaceous matter, or the food supplied, it will prove more or less adapted to the support of vegetables. The digestive powers of the earth must depend upon its chemical qualities, and its distributive powers on its mechanical texture. Thus, calcareous earths have great influence in modifying the decomposition and recomposition of animal and vegetable substances; and the mechanical texture of the soil, as it admits or obstructs an equal and free distribution of water, must also very much influence the growth of vegetables.

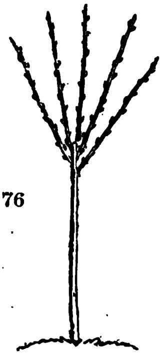
Pursuing our comparisons, then; as we know that the health, vigour, and prolificness of animals depend as much upon the quality and proper digestion of their food as upon the quantity, and upon the proper adaptation of their lodging, and the climate which they are doomed to occupy, so we find it to be the same with vegetables: and, as the success of the grazier and breeder depends upon the skill with which the food is selected and administered to his animals, the clean state of their lodgings, and the purity of the air in which they are kept, so must that of the gardener with his plants. It is well known, that if an animal which has been living on a poor and meagre diet is suddenly supplied with an excess of highly stimulating food, the dangerous disorder called a surfeit, and all its consequences, will follow; and such will always be the case with vegetables: for whenever water containing a large portion of putrefying matter, from whatever source derived, stagnates about the roots of a plant, it will produce gum, canker, morbid exudation, blotched and blistered leaves and shoots, fungus, &c.; and a quantity of putrefying animal matter being placed in contact with the roots of plants, and holding water in a stagnant state, will produce the same effects. It is believed by some, that those diseases are merely local; but this is a mistake. Local injuries may facilitate and determine the appearance of disease; but as the same kind of wound which will create inflammation, disease, and death, in one animal, may be inflicted on another without any such injurious consequences, so it is with plants. A plant in a healthy state may be wounded with impunity; whereas the slightest bruise in one in an unhealthy state will immediately putrefy, and produce a corrosive ulcer. But, whether these comparisons be admitted as just or not, the causes and effects, as explained, are found to be true, by the practical demonstrations of actual and repeated experience and observation. If any persons entertain any doubt of the facts, let them examine fairly any plant that is thus diseased, and their doubts must be removed; or let them establish the cause as described with any healthy plant, and they will not be deceived by the effect.

We may also carry our comparisons still farther. It is well known that animals which are fat, gross, and bloated, are never safe and certain breeders; and that is the case with plants, and with parts of plants. A double blossom, or a large quantity of leaves and stalks that are blistered, bloated, and cankered, in a plant, is tantamount to a fat, gross, and bloated animal; and every observant gardener may know that such plants are never prolific or fruitful. Cucumbers and melons, as they are commonly grown, bring but a very small portion of the fruit they show to maturity; and the cause is, their being planted upon beds of dung. If a covering of slates, tiles, stones, or boards, with their joints cemented, be placed between the dung and the earth, and the earth be a well decomposed and purified soil in which the plants are to grow, more than double the quantity of fruit may be produced, under the same lights, than by the common mode. The same principle extends to almost all plants; the production of a large quantity of stalk, branches, and leaves, and the production of flowers and fruit, are seldom found at the same time.

As a due provision of the elements of vegetation is made by nature, so is the combination and action of those elements, in their progress from cause to effect, grounded and determined by certain laws of nature. Having then informed ourselves what the elements are which nourish and sustain plants, we must next acquire a knowledge of those laws of nature, as without this we cannot exert any beneficial influence over the growth and production of plants.

I have explained and arranged those laws which I consider to be immutable, in determining the growth and productions of plants, in eight divisions: one of which is, that no plant can produce blossoms or fruit, until it has made a certain progress in its growth, and acquired a surface of stalk, branches, and leaves, duly proportioned to the food it consumes; and another, that the flow of sap in all erect-growing plants is vertical, or directly opposite to that of the natural flow of water. Thus, as water, when passing through a ramification of vessels, will make its way into the lowermost first, and press the most on the nearest downward openings, to make its exit; so will the sap of a tree make its way to the uppermost branch, and press the hardest against the nearest upward bud or opening, to make its exit in the formation of fresh branches: in other words, as water is impelled by gravitation, the sap of erect-growing trees is impelled by some power that is quite the reverse. We know, such are the powers and resources of nature, that it is not in the power of mankind wholly to prevent her attaining her ends; were it otherwise, and were the obstructing of her laws to divert her from her purpose, a gardener who cuts his trees after the common manner could have little right to expect a crop of fruit: but, although a crop of fruit can be sometimes obtained by cutting and slashing at random, who but a tasteless and graceless ignoramus would prefer such a mode to observing the laws of nature, and regulating all his movements conformably to the rules of order, and thus to assist his trees in assuming those forms of elegant symmetry which are pointed out by nature? Although I have exhibited trees trained in conformity to those laws, and of such figures or forms as have excited the admiration of all who saw them, and explained the principles and described the manner of doing so, it appears that very few have followed my example. Why they have not, those who have seen and yet neglected my plans can best tell.

I have noticed in your Magazine some plans of what is called the reverse training, and particularly of some pear trees in the Chiswick gardens. It is evidently a simple and easy matter to train a tree in this manner for a year or two; but unless the orderly rules pointed out by the laws of nature, which I have explained, be observed, the trees trained in this manner will not be more prolific, and they will assume a much more disorderly appearance, than if left to the course of nature. By those laws, if a branch that is growing in a vertical position be reversed, the sap will no longer flow into it in the same quantity; and as reducing the sap to the proportion of the leaves, &c., must be tantamount to increasing the surface of leaves, &c., in proportion to the sap, the branch will fructify. But, as by the same laws the sap will force its way through the uppermost buds at the base, and there form the strongest branches in an erect position, these will grow up and intermingle with the others above them; and therefore, unless the orderly rules pointed out by the laws of nature be observed, a greater confusion and disorder will be produced than if the tree had not been trained at all.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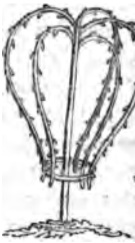
By the following plan, it must be obvious, all the good effects of this mode of training may be obtained, and all the evil avoided. Suppose a plant to be obtained with four or five strong shoots of 3 ft. or 4 ft. long, on a stem of 4 ft. or more high (*fig.*76.), then let a small hoop be bent round the bottom of the trunk, and all the branches bent regularly down, and affixed to the hoop (*fig.* 77.); the consequences will be as before explained. As several of the uppermost buds on the base of each branch will probably throw out strong wood shoots, one of them that is placed in the best situation to admit of being bent down to supply the place of the parent branch when worn out, should be selected, and all the rest rubbed off close; and as the shoot that is left will grow large and strong, in order that it may be better adapted for bending, it should, as soon as it is 5 in. or 6 in. long, be brought gently down, and affixed to the old branch (*fig.*78. *a a* marking the young shoot tied down). Trained in this manner, whenever it may be found necessary to cut out the old branches, these, by a half twist, may be brought down without danger of breaking, and the bend will be less abrupt and unsightly. By the same rules, trees may be trained in the same manner, with two or more tiers. (*fig.* 79.) It may be observed, that the success of this mode of training, as well as of the others which I have explained, depends upon due attention being paid to the disbudding, or rubbing off useless shoots, in the spring; and taking due care of those which are intended either to carry on and extend the tree, or to succeed and occupy the place of the old bearers. This mode of training will be found extremely well adapted to apple trees on paradise stocks, pear trees on quince stocks, cherry trees, &c.; and also to peach trees in pots: and it is a most economical mode, as it requires no stakes.



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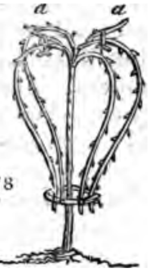

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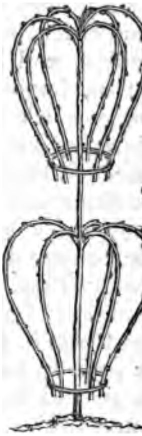

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I am, Sir, yours, &c.

J. Hayward.

Feb. 14. 1830.

Art. VI. *Remarks on the State in which various Plants from European Nurseries were received in America.* By Jesse Buel, Esq., C.M.H.S.

Sir,

Having recently received trees, grafts, &c., from several European nurseries and amateurs, I wish to communicate through your Magazine, which I presume is perused by all of the trade, some remarks as to the quality and condition of the articles received, for the benefit of the parties concerned and of the public generally.

Two hundred pears from M. Noisette, Paris, pretty well packed in moss and straw. Plants tolerably healthy, but all worked on quince stocks; a serious objection in this climate, where the quince is short-lived and subject to disease. Several bales, imported in the same ship, from other French nurseries, were in wretched condition, packed only in straw, many of the bands broken, the roots bared and dry, and the plants without indication of remaining vitality.

Sixty roses from M. Noisette. Wrote for new hardy varieties; received half tree and half green-house roses, all well packed in moss. The first handsome plants, but doubtful whether they will withstand the severity of our winters. The Chinese mostly weak plants, some but imperfectly rooted and recent layers; too small to bear close packing and long transportation; some dead, and others sickly.

Twelve grapes, and forty georginas, from Charlwood, London, well packed in moss and basket; in excellent condition; the georginas charged at 4*s.*

Fifty roses from Charlwood. Grower not known; came in good order, but plants shamefully bad; most of them merely budded, and of a feeble year's growth. Our great reliance, in roses imported, is on healthy strong roots of the varieties charged, which may send up shoots, the tops being often injured or killed; but when we find that we have got merely a budded twig upon a common stock, and that the chances are about equal whether this twig lives or dies, our disappointment and mortification are great, and we feel that we have been imposed upon.

Fifty roses from Loddiges. Tolerable plants, and in good condition: but we have particularly to complain that the finest rose in the collection (the Belle Alliance, and for which we paid 7*s.* 6*d.*) was merely a small twig, budded 30 in. from the ground, nearly broken off, and to appearance irreclaimably lost.

Grafts from the London Horticultural Society's garden; from the Rev. Mr. Bree of Coventry; from Young, Epsom; from Ronalds, Brentford; and from M. Saul, Lancashire; all packed by Mr. Saul in clay; came in very good condition.

Forty-two apple and pear trees from B. Saunders, Island of Jersey, came to hand May 10. and yet in fine condition; packed in moss and straw, and boxed. The only fault was in putting moss among the branches, instead of confining it to the roots; in consequence of which, some of the limbs were dead.

Trees and plants sent from Europe to America are, in ordinary cases, from fifty to sixty days out of the ground, and are exposed to the weather before and after being on board ship. They should be so packed as to preserve a degree of moisture to the roots, and to prevent, from careless handling or ordinary casualty, the exposure of these to the weather. These objects may be effected by a free use of moss about the roots, which should be compactly interlaid, the bundles well tied and covered with straw and mats, or boxed, with occasional holes for the circulation of air. The moss employed should be but slightly moist, and for georginas and other herbaceous plants perfectly dry. Budded roses, weak plants, and recent layers should not be sent, except by request, as they seldom survive the voyage; and it would be well if the grower's name were in every case to accompany his plants. It would be a recommendation to the fair dealer, and a salutary guard against imposition. Yours, &c.

J. Buel.

Albany, New York, May 11. 1831.

Art. VII. *An Essay on Rockwork in Garden Scenery.*

By S. T. P.

The use of rockwork in gardens may either be as a distinct feature; as a situation for cultivating certain plants; as a screen for concealing objects; or for two, or more, or all of these purposes combined. As the expense of collecting large stones is considerable, rockworks, in general, are made on too small a scale, and more resemble heaps of stones, with the interstices filled with weeds, than the protrusion from the soil of a portion of real rock, decorated with ornamental plants. In a grand place, every thing ought to be on a grand scale; and few objects produce a more striking effect than immense masses of stone, piled together in such a way as at once to give a particular character of rocky mass, and to form a proper nidus for valuable plants.

The grand difficulty in rockwork is to form and maintain a particular character or style in the disposition of the masses; and the only way to conquer this difficulty is to observe the manner in which masses of rock are disposed in nature, or rather in such natural scenes as are admired by men of taste, and especially by painters. And here the study of geology will materially assist both the painter and gardener. The geologist knows that particular species of rocks are found disposed in particular layers, and display certain characters, both of horizontal and vertical lines, which distinguish them. Where no prevailing disposition or tendency of the lines exists, there will certainly be no great beauty of character. A number of large fragments of rock thrown indiscriminately or even distributed carefully over a surface, whether that surface be even or irregular, will not give the idea of a rock. For this purpose, there must be a continuation of solid mass; and that the mass may be grand, it must be considerable, and the prevailing lines straight, and in general oblique to the horizon.

A few hours' study in a rocky country, or along the rocky banks of a river, by a person who has been accustomed to sketch from nature, will do more towards giving him correct ideas on the formation of rockwork than a volume of words. Without this study of nature it is scarcely possible for a gardener to have a just feeling of the effect of lines; and this is the grand reason why, in garden rockworks, a combination of fragments, so as to form masses in imitation of the strata of nature, is seldom or never attempted. It is no uncommon thing to see a goodly assemblage of large stones, and perhaps old roots and trunks of trees, lying loosely together on a mound of earth, as if it were quite sufficient to have removed the former from the quarry, and collected the latter from the woods; but very few gardeners have thought of imitating the strata of the quarry, or those rocky precipices frequently seen in hilly countries and on the banks of rivers. Even the grouping of fragments has not been sufficiently attended to. If the gardener, who is about to form a rockwork, will fix in his own mind on the style of some abrupt bank or precipice, which he recollects to have seen and admired in nature, and keep that steadily in his mind's eye, he can hardly fail of producing something which will strike and please: but, if he does not feel sufficient confidence in himself, we would recommend him to take the advice of a landscape-painter who has been accustomed to rocky countries. Of all men that we know, the fittest for this purpose is, or was some twenty years ago, Mr. Nasmyth of Edinburgh.

London, Feb. 7. 1829. S. T. P.

The hillocks of flints and fused bricks, usual in gardens, correspond so ill to the terms "rock," "rockwork," and "rockery," that a new term would not be amiss for them. Mr. Maund remarked to this effect some time since, in his *Botanic Garden*, and then and there suggested the term

" Lapídeum" as the amendment required. In Staffordshire and Cheshire they are often called " stoneries.' It is said the rockery in the Liverpool botanic garden consists of an assemblage of masses of real rock, brought off various foreign stations, as the ballast of ships, by seafaring gentlemen devoted to the welfare of that garden. The rockery at Syon House is composed of numerous large blocks of granite.—*J. D. for Cond.*

Art. VIII. *On the Supporting of recently removed Trees.*

By William Thom, Esq., Surgeon, Annan.

Sir,

Though the supporting of recently removed trees constitutes a very essential and by far the most difficult part of the operation of planting, yet but little is taught by authors on the subject, and still less seems to have been learned by operators.

Indeed, I am not aware that any efficient or scientific method of retaining recently transplanted trees in the erect position is at all known; and, judging from the practice of our most experienced planters, I consider myself entitled to conclude that no such knowledge exists.

Sir Henry Steuart gives it as his opinion (*Planter's Guide*, p. 112.) that " supports or props, whether composed of wood, cordage, or any other material, are of little avail in giving stability." But the substitute he recommends (a certain whimsical cup-like embankment around the roots) has not been found to exert much retaining influence beyond the precincts of Allanton Park; and, even there, the learned author restricts its use to bushy trees with short stems and numerous roots, and dissuades from attempting at all to transplant trees of a different character.

Indeed, our knowledge both as to planting and propping remains precisely the same as before the learned baronet's thousand and one entertaining stories were compiled, or the report of the Highland Society on his achievements was penned.

In removing the trees from the old to the new botanic garden at Edinburgh, a very few years ago, the experienced and scientific Mr. M'Nab had recourse to guy ropes for support; and Mr. Sang * of Kirkaldy, a gentleman also of great experience in these matters, has given it as his opinion, " that it was impossible to have made such subjects stable by any other means."

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* Strictures on Sir Henry Steuart's Planter's Guide, p. 14.

Planting is very generally understood, and is scientifically described by many; and by none better than Mr. Reid, gardener at Balcarras (*Memoirs of the Caledonian Horticultural Society*, vol. iv. part ii.): but, when he comes to supporting his recently planted trees, what does he do? Why, "the stem of the tree is then made fast to the stake with a hay-band."

Now, I make no doubt but our first parent (if he took the trouble to prop trees at all) proceeded precisely in this manner; and that if he were now to do us the honour to look at a newly propped tree, he would use the same expression that the witty Count Oxenstiern represents him to have done when revisiting Spain: — "On n'y a rien changé depuis mon départ." ("Things remain here just as I left them.")

To the success, however, of every transplanted tree, it is absolutely necessary that *motion of its roots be prevented*, so that all, and particularly the very first, fibres that issue from the injured roots may be preserved, their services being early and eminently needed to supply sap before the buds shall have perished, or the tree become stunted by the contraction of its vessels.

A recently removed tree, that has been once or oftener tossed about or upset by the wind, so as to have its shooting radicles broken or injured, may, perhaps live; but, if so, it will languish, and be several years before it becomes either fruitful or ornamental. It therefore becomes a great desideratum "how to prop a tree without inflicting injury, so as effectually to prevent all and every motion of its roots, and at the same time to admit of these roots being placed in a situation the most favourable to vegetation."

This is the problem I purpose to solve; and I hope to do so without placing my trees in the magical cup of Sir Henry Steuart, or borrowing a single flickering ray from the aurora borealis of Allanton House.

To accomplish this object, I am in the habit of using two different methods, according as the one or the other is more applicable to present circumstances; or rather, I practised the first for several years, before I had the good fortune to think of the second or more perfect method. Both plans I believe to be new; at all events they are both *effectual*, and may readily be put in practice by any dexterous workman, at a very small expense either of time or material.

I shall now proceed to describe the method I first practised, and of which I have most experience, although I believe it to be inferior in many respects to that which I have more recently adopted. This latter, I apprehend, will defy the critic; but I readily admit that a peevish disposition may experience some gratification in finding fault with that which I am now about to describe, viz. "the method of propping trees, by obvious supports *above* ground."

I shall be more readily understood, and in fewer words, by detailing first the theory or plan, assuming the practicability of the work; and giving, in the second place, directions as to its execution.

Let the tree be considered in the centre of the circle at A, *fig.* 80. Let it be supposed practicable to affix a spar sufficiently strong and inflexible to the tree at A, at a convenient height (say 2 ft. or 3 ft. above the surface), and its other end to an immovable stake B: it would evidently maintain the tree against any impulse coming either from A to B or from B to A.

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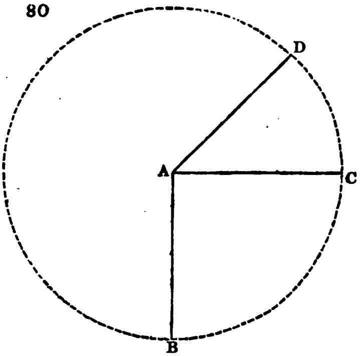


For convenience, let us assume the points of the compass, and call this east and west. Again, if a similar spar were also affixed to the tree at A, and its other end to a similar immovable stake at C, these lines being perfectly at right angles, the tree would now be also unassailable in the directions from south to north, and from north to south, and, consequently, in every other direction, or from every point of the compass; for, from whatever *diagonal* direction the wind might blow, both props would yield support.

Caution. The efficiency of the plan depends upon the accuracy of the angle. Include an arc of more than 90°, as B A D, and any impulse in the direction A C or C A will upset the tree. Include less than 90°, as C A D, and the same untoward result will occur whenever the wind shall blow at right angles, or nearly so, to either of the lines A C or A D.

The practicability or execution of the work is now to be considered.

The experienced operator will at once perceive that the principal difficulty will occur in obtaining the requisite hold of the tree without injuring the bark.

In some cases this may be a valid objection; but, in practice, I have generally been able to surmount it. Indeed, in a great majority of cases, no such difficulty occurs; and, when it does, the more perfect plan of propping (hereafter to be described) effectually obviates all such objections.

In the mean time, however, I shall enumerate a few of the methods I practised before I attained to a knowledge of the more perfect plan. Most trees, when removed, have one or more branches wounded that it is prudent to amputate, or, at least, have one or more that may be spared without causing much deformity or injury.

First Method. — I take advantage of such favourable circumstances to nail my props to the stumps of such condemned branches, observing to insert the nail very near to the boll of the tree, so as to obtain all possible firmness; but leave the stump from 10 in. to 12 in. or more long, to prevent its being split by the insertion of the nail. When the tree is sufficiently established, the connection with the props is terminated by passing a saw close to the boll.

The small-beer critic, who has drawn his little modicum of lore from no other source than certain publications, including your own, may probably here object to the loss of a branch, and cavil about mutilation. I beg leave, however, to assure him, that the lopping of a branch or two is not always a heinous sin, but merely a matter of taste.

It is certainly unnecessary, in so far as the success of the operation of transplanting is concerned: but, at the same time, it is frequently required to improve the appearance of the tree; and, when practised to this extent only, is perfectly harmless.

Second Method. —When there is no disposable branch in a convenient situation, I have frequently effected my purpose by weaving or entangling the upper end of my first prop betwixt two or more branches, describing an arc of a circle with the lower end round part of the tree, till the hold among the branches became sufficient, and in that position affixing the lower end immediately to the stake. The hold is improved and completed by nailing the second to the first prop. In this manner, trees may be very effectually supported with but very partial injury to such part of the bark as the props bear upon; and this trifling injury may be greatly diminished, or altogether prevented, by permitting the end of one of the props to project and rest upon a stake, as in the fourth method, hereafter to be noticed.

Third Method. — In several cases I have secured trees of 20 ft. high and upwards, when they had no low branches, by driving one effectual nail into the boll, about 2 ft. above the surface, so as to secure one prop, and then nailing my second prop to the projecting end of the first, in preference to perforating the tree with a second nail. One such nail or spike (as is hereafter described) will in this manner support a tree of 20 ft. or 30 ft. high, against all the ordinary gales and gusts of wind that usually lay unprotected trees prostrate. There need be no hesitation, however, in using two nails, one in each prop; and, if their direction be at right angles to each other, a very slight hold of the tree will be sufficient, as the impulse in that case will always be against the side of at least one of the nails, and the risk of the tree falling, or being blown from the point of the nail, be obviated. When the tree is established, and needs no longer support, I saw off both ends of my props as near as possible to the nail; split off with a chisel what remains; next saw off the projecting part of the nail, and drive it with a punch into the tree, as it could scarcely be drawn out without peeling the bark; and I finish by dressing the wound with grafting-wax. During the first season it is healed over; and, in eight or ten years' experience, I have not found disease or injury to follow.

This method I have practised with the beech, the holly, the pear, the willow, the elm, and even the sycamore; but the last I never wound except late in autumn.

The practice, of course, would not be applicable in the cherry and the plum, or in any of the resinous tribe.

Fourth Method. — In the total absence of branches, and when the insertion of a nail is objected to, the following is the method I have adopted: — Having secured the lower ends of the props to the stakes at the requisite angle, let their upper ends cross each other just beyond the tree, at a convenient height, say 2 ft. above the surface, so as to include the tree in the angle; in which position it must be retained by a cross bar, as in propping under the surface, hereafter to be described. The end of one or both props must be long enough to project a foot or two beyond the tree, in order that they may rest upon and be nailed to a stake or stakes firmly driven into the ground at that place as a *point d'appui*, so as to prevent all motion of the props and consequent friction on the bark.

In this case the work is rather troublesome to execute, and unless it be skilfully performed the bark is liable to be injured. It should, therefore, only be adopted when other methods are, from particular circumstances, inapplicable. With due care, however, it is perfectly harmless and efficient.

Of Ropes and Ties. — Let me caution all and sundry against ropes and ties, whether employed as guy ropes, or as substitutes for nails. By their tightness they obstruct the flow of the sap, and however perfectly they may at first be applied, the vicissitudes of the weather will shortly render them ineffectual. When wet, they press injuriously from increased tightness, or are occasionally broken, and in high winds, without rain, they become elongated so as to admit of motion, and consequently friction, to the injury of the bark at least, and frequently also to the destruction of the nascent radicles or fibres by the rocking of the tree; and, to complete the disaster, they will probably be found some stormy morning to have been worn through, and the tree blown over, just when it was supposed to have been nearly out of danger. Nails only, and nothing but nails, can be depended upon; but, to be trustworthy, they must be made for the purpose. I give this caution with painful recollections: the brittle article usually fabricated at the forge has caused me many disasters. If you do not choose to be at the expense of copper, procure the best nail-rod iron, made in a charcoal fire, such as that from which horse-shoe nails are made, and cut it into proper lengths, as needed, with a file. It is abundant in the market, of the proper size, viz. from one quarter to three sixteenths of an inch square. Never allow it to enter a smith's or nailer's forge, else he will render it brittle from the sulphur of his coals. The point is readily made at the same time you cut the iron, and they require no heads; folding over does better, and you have thus excellent nails for less than half the price of bad ones.

Before driving your nails, always bore your holes completely through, with a gimlet of the same calibre as your nails. If either the branch, or prop, or stake be split, it cannot be expected to hold. Never use more than one nail at one juncture; more are unnecessary, and the holes would weaken the timber.

Of Props. — It has already been mentioned, that as the spars must give support in both directions; they must necessarily be of sufficient strength to be inflexible when supporting the tree against the impulse of a gale of wind. Their lengths must be determined by the height of the branch or stump to which they are attached, as they will be found to answer best when they form an angle of 45° with the surface and with the stem of the tree. Greater elevation will not give the requisite support; and less, though it may be as efficient, is not more so, and adds unnecessarily to length and consequent incumbrance.

Of Stakes. — These must be of sufficient length to admit of being driven at least 2 ft. into the solid subsoil, as the loose cultivated earth will not afford sufficient resistance. Great strength is less essential than a solid head to allow a sufficient hold for the nail or spike that attaches the prop; and such attachment should take place under the surface, that the wind be not afforded a lever power against the stake. Neatness and convenience will indicate the propriety of sawing off the head of the stake level with or under the surface. When the work is thus properly executed, I am entitled to conclude that any tree it may be desirable to transplant, of whatever magnitude, may with two stakes, two props, and four nails, be effectually supported so as to withstand the ordinary or usual gales of the British Isles, and that in the most exposed situations. Of this assertion my garden and shrubbery, exposed to the violence of the south-easters that sweep the Solway, afford ample proof.

I shall select as witnesses the following elders from among a considerable number of juniors of less note.

1. A Scotch bergamot pear tree, planted in January, 1821; situation exceedingly exposed; girth 2 ft. 10 in.; height now only 22 ft., but previously to last year, when some grafts were inserted, it was about 30 ft. high. It was propped the three first years with strong props, nailed to a rejected branch 4 ft. from the surface.

It bore fruit the first and every subsequent season, and has most perfectly preserved its perpendicular these nine years.

2. and 3. Two English elms, nearly of a size. Medium girth 2 ft. 2 in., height 23 ft.; planted the same season as the foregoing. The props nailed to the bolls of the trees.

4. A beautiful yair pear tree, planted November, 1828; bore fruit each season since, and is now very thriving; girth 2 ft., height 26 ft.; props nailed to a rejected branch 4½ ft. from the surface. It perfectly preserves its perpendicular, and rises 8 ft. as now dressed, without giving off a branch.

5. An autumn bergamot pear tree; lower and more spreading than the preceding; planted same day; girth 2 ft. 2 in., height 22 ft. Props were nailed to rejected branches, of which the tree afforded many. It missed fruit the first, but bore the second season, and preserves its perpendicular although the props have been some months removed.

6. A slender Huntingdon willow, taken from a sheltered to an exposed situation, placed, indeed, in the front of the battle, to protect against the storm its more favoured associates; girth only 1 ft. 9 in., height 31 ft. Stood now about twenty-eight months, and most perfectly preserves its perpendicular, although it had very few roots when planted; props nailed with one nail only, of less than ½ in. square, to the boll, about 6½ ft. from the surface.

7. A plane or sycamore, without any low or spar branches;

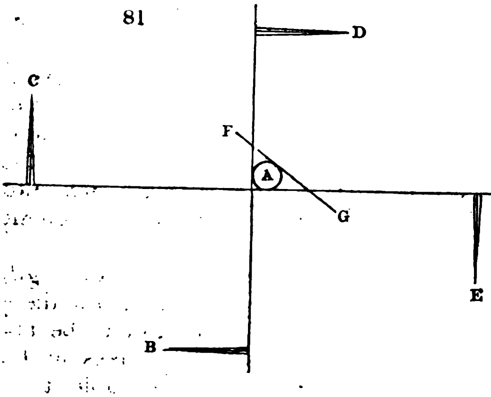
girth 1 ft. 3 in., height 23 ft.; height of props 2½ ft. Planted twenty-seven months ago; has also preserved its perpendicular.

I would not have considered this as worth mentioning, only that it has afforded proof that even the plane may have a nail of sufficient size to support it driven into its stem, in autumn at least, without exhibiting any symptoms of impatience or of injury. The wound did not bleed; is now healed, and the tree thriving.

Notwithstanding all its faults, I have great confidence in, and partiality for, the method of propping trees above described. It has, indeed, several imperfections; but these are more apparent in relating the plan than in practising the work. In parting from it, and recommending another method as preferable, I experience something of that reluctance which we feel in separating from an esteemed friend, on whose good offices we have been accustomed to rely. But it frequently occurs that new acquaintances occupy the place of former friendships; and so it happens here. I now prefer, and of course more frequently practise, "the new method of supporting recently transplanted trees by horizontal props, concealed under *, or level with, or immediately above, the surface."

This plan is applicable to subjects of every age, size, and denomination, and scarcely liable to any objection that even the ingenuity of the critic can conjure up. In short, I consider it as nearly perfect as the nature of things will admit of. Its principle of operation is simple, and readily comprehended, and the workmanship of such easy accomplishment that it may be done, in the absence of a carpenter, by almost any labourer. Nor are the materials necessarily expensive; for though square planks may be occasionally proper, where great strength and elegance are required, round poles or boughs, fit for little else than the fire, will generally suit the purpose, there being scarcely more required than two spars laid in the form of a cross, and secured to four stakes, as in *fig.* 81. A is

81



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* An application of which was observed by Mr. E. Murphy at Chatsworth, as made by Mr. Paxton. (See p. 297.)

the tree; B C D E are strong stakes, inserted beyond the extremities of the roots, to each of which the cross is firmly nailed; F G a cross bar, confining the tree absolutely and immovably within the angle of the cross. The tree is necessarily touched, and even pressed at three points, and deprived of every the smallest vestige of motion in any direction. Should the bark be partially denuded at the three points of contact, a circumstance by no means usual or necessary, when the workmanship is neatly performed, I consider it only a very venial fault, which the free-flowing sap of a vigorous tree will soon repair; but if, from the slovenliness of the workmanship, motion be permitted, serious injury may be inflicted on the collar, by the friction against the cross.

The position of the cross or supports, relative to the surface, must be regulated by the following considerations:— When neatness is greatly desirable, they may be concealed under the soil, or their upper sides made just level with the surface. This, however, presupposes a depth of soil over the roots to the extent of the diameter of the spars; say three or four inches at least; but such deep planting, more especially with fruit trees, is generally and deservedly disapproved of.

When, therefore, elegance and concealment are not so imperatively called for, it may be prudent to keep the horizontal spars at least an inch clear of the surface, both to admit of shallow planting, and also to avoid their being bent or displaced by the heaving of the surface from the expansion during frost.

As to the stakes, if the direction already given be attended to, their depth will insure their stability.

The swelling of the collar, generally about the middle of the second summer, will indicate the time when, support being no longer necessary, restraint might become hurtful.

The efficiency of this method depends upon the firmness of the stakes and the durability of the materials, and its elegance upon the concealed position of the cross and neatness of the junctures; in effecting which, the operation of the carpenter termed half-checking (that is, letting each into each to the extent of the same diameters respectively) ought to be had recourse to.

In every instance the limbs of the cross should be of length sufficient to extend beyond the roots of the tree, lest these be injured in driving the stakes; and, if this cannot be accomplished, care must be taken to insert the stakes in the interstices. But length of limb is more desirable than strength or number of stakes, and indeed will, in some instances, when the cross is sunk in the soil, be sufficient of itself; so that, were it not to make assurance doubly sure, the stakes (in cases of comparative shelter) might be dispensed with.

Let us now examine the stability of a subject thus supported.

When a tree is blown over, its roots are necessarily elevated out of the soil on the one side at least, while the collar must also have considerably changed its situation; for the axis of motion is at the lower side of the nucleus of roots, perhaps 10 in. or 15 in. under the surface. The collar, therefore, must necessarily be moved to leeward; in short, describe the arc of a circle corresponding in extent to its radial distance from the centre of motion. But, by the method of propping now described, the collar is held immovable, and the roots and soil feel the salutary restraint which the cross imposes. In short, the tree may be bent or broken, but uprooted it cannot be whilst the materials keep their hold: and, as there is no necessary limitation to the strength of the horizontal cross, or number or extent of perpendicular stakes, failure can be the result of awkwardness or miscalculation only.

And here I pause, confiding that I have accomplished the great desideratum with which I set out; that without inflicting any appreciable injury, or adhibiting any cumbrous or unseemly appendage to the subject, or incommoding the walk or park with guy ropes, I have shown (in this my last method) the manner how to prop a tree, that will equally resist the hissing of the critic and the howling of the gale. In its principle, it is simple as truth; in its operation, uniform as the law of gravitation; and its efficiency, convincing to the mind as the demonstrations of geometry.

I am, Sir, yours, &c.

Annan, Feb. 21. 1831. WILLIAM THOM.

ART. IX. *Account of the Flowering of the Agàve americàna in the United States.* By J. M. of Philadelphia.

IN the *London Magazine* for July, 1764, there is an account of the flowering of an Agàve americàna, at Charleston, South Carolina, in the year 1763. The plant was then about twenty-eight years old; the leaves 7 or 8 ft. long, and proportionably broad and thick. On the 20th of April it gave the first appearance of putting out to blossom, bursting *open* the central leaves, about 6 ft. from the ground. On the 5th of May, it exhibited the likeness of a monstrous asparagus. On the 12th, it was 15 ft. high; having grown 5 or 6 in. every twenty-four hours, except on cool days. On each side of the stem, about 10 or 15 inches below the top, appeared the shooting out of a substantial bud: every two or three days, as the plant advanced in height, others were put out in the same manner. On June 10th, the several lateral and alternate buds, supported on peduncles of various lengths, from 1 to 2 ft. 10 in., burst open into 5 or 6 subdivisions, each about 4 in. long, bearing numerous erect clusters of flowers. The height of the whole stem was about 21 ft. 10 in. On June 19. it was 24 ft. high, and advanced much slower than before, and the under leaves began to wither. On July 5. there were thirty-one peduncles, supporting as many clusters of flowers, from 7 to 12 in. in diameter. The flowers began to open, and on the 7th, the lower clusters were in perfection. Each flower was nearly 6 in. high, and about 1 in. in diameter, of a brimstone colour: the circumference of the stem, at 3 ft. from the ground, was 17½ in.; each particular flower took up the space of three days to expand, and reach its point of perfection. On July 16. all the leaves, though still green, were flaccid, wrinkled, withered, and daily fell; the lower clusters of flowers withering, whilst those of the uppermost clusters were just opening. It was now 25 ft. high. On the 22d of July, the flowers at the top of the spikes were decayed, and the withering daily increased. An engraving of the plant in flower is given, as also of a flower.

In the year 1804, another plant of Agave americana flowered at the Woodlands, on the Schuylkill, the beautiful seat of the late Mr. W. Hamilton. It was raised from a sucker which flourished at Springetsbury * in the year 1778. On the 25th of May, 1804, Mr. Hamilton first observed its inclination to flower. In a day or two afterwards the sprout appeared, in the form of an overgrown asparagus shoot. When the stalk was more than 8 ft. high, the racemes began to appear. Extremely wet weather retarded its progress. The first flowers opened on July 28.: it remained in flower for forty days. The stem at its base was 16 in. in circumference. The number of flowers was 3069. The bees appeared exceedingly fond of the flowers. On the 4th of June, the stem was 2 ft. 6 in. high; on the 29th, it was 9 ft. 7 $\frac{2}{10}$ in. high: and on the 28th of July, it was 13 ft. 10 $\frac{1}{10}$ in. high.

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* Near Philadelphia, then the seat of the Hamilton family.

The plant was out of doors. Height of the plant, exclusive of the flower-stem, 4 ft. $7\frac{1}{10}$ in. Total height, from the top of the tub in which it grew, 18 ft. 6 in.*

In the year 1821, a third Agàve flowered in the handsome garden of Henry Pratt, Esq., on the river Schuylkill. The age of the plant is not known. From May 28. to June 4. the flower-stem grew from 4 to 6½ in. daily, and the total growth was 3 ft. On the 5th and 6th of June, it grew 9 in. each day; then to the 17th of June, from 2 to 6 in. daily: total growth 8 ft. 2 in. The height of the flower-stem on the 17th of June was 8 ft. 11 in. From the 18th to the 21st of June, it grew 3 or 3¼ in. daily, or 1¼ ft. The total height of the flower-stem 10 ft. 3 in. The flowers were not counted, but they were as numerous as possible. On the 4th of June, Mr. Pratt had the plant taken to the vicinity of the Asylum for Orphans and Indigent Widows, and exhibited for a trifle. The produce (a considerable sum) was given to that establishment. J. M.

Philadelphia, May 13. 1829.

ART. X. *On the Culture and Propagation of the Erythrìna Crísta-gálli, Erythrìna laurifòlia, and Chrysánthemum sinénse.* By Mr. J. ELLES.

Sir,

IF you think the following observations on the culture and propagation of the Erythrìna *C*rísta-gálli, E. *l*aurifòlia, and the *C*hrysánthemum sinénse, are worthy of insertion in the Magazine, they are very much at your service.

Few ornamental plants equal in splendour the Erythrìnæ and, as it is well known that they can be cultivated in the same manner as georginas, nothing more seems wanting to enable us to stock our flower-gardens with a profusion of them, than an easy, expeditious, and sure method of propagation. That there is such a method, and that they can be increased with as much facility as the georginas, the following will, I think, clearly show: — As soon as the plants have done flowering (or even plants that have not flowered at all, but which have ripened their wood tolerably well, will answer the same purpose) cut them down, and make as many cuttings of the stems as there are buds, preserving, if possible, the leaf, or rather the three leaves, to each bud; and if the buds are opposite each other, as is sometimes the case, the stem may be split, if near the bottom, where the wood is hard and well ripened, for this part of the stem will root even without the assistance of the foliage; indeed, I find that the top and bottom, that is, the hardest and softest parts of the stem, root more readily than that which is in an intermediate state: but the ripest wood is the best. Having prepared the cuttings, plant them separately in small pots, with the eye or bud just below the surface of the mould, which should be light and sandy, the piece of the stem which forms the cutting being laid flat: then immediately place them under a hand-light on a strong bottom heat, so that the heat under the glass may range from 75° to 80° Fahrenheit, shading regularly when the sun is likely to scorch them, or dry up the moisture; for they should be kept constantly well watered. In three weeks they will be rooted, when they may be gradually hardened, till they will bear a shady part of the stove. Thus from every single stem no less than from twenty to thirty plants may be annually reared; and if the flowering plants are forced, so as to make them flower twice a year, double that number may be obtained. I have this season propagated upwards of thirty plants from one which was but a last year's cutting.*

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* Coxe's Museum, vol. i.

In cultivating the Chrysanthemums, I think the plants best furnished with leaves and flowering stems are obtained from cuttings taken off in the latter end of April or in the beginning of May; as cuttings taken off at this period, when struck, topped, and trained up with three or four stems, seldom grow higher than from 2 to 2½ ft; and if planted in a rich compost, and well supplied with liquid manure, each stem will throw out flowering branches from the bottom, forming handsome bushy plants. I have, upon plants treated in this manner, upwards of twenty-four flowering branches on a single stem; but many varieties ramify less freely. To obtain very dwarf plants, I have occasionally practised for many years the following method: — On the 1st of August the points of the strongest shoots were taken off at a joint, about three or four inches in length; not a leaf was removed, except the bottom one, from the part which was to be inserted into the mould: the cuttings were then immediately planted, separately, in small pots, and placed under a hand-light upon a gentle bottom heat. Here they were well watered and shaded, and rooted in less than three weeks; afterwards gradually hardened till they could bear any exposure; then, being shifted into larger pots, they were again placed on a gentle bottom heat, without any protection from glass or otherwise, until they showed flower. It is this bottom heat which is the only secret in the process, inasmuch as it enables the plant to make up for the time which was lost while the cutting was striking.

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* With regard to the general culture of erythrinas in pots, no person can, I think, go wrong, if he but give them a rich light soil, abundance of water, and plenty of pot room, with a moist atmosphere: these will seldom fail to make them flower freely. When dormant, they should be kept perfectly dry.

By this method, perfectly dwarf plants may be flowered in great beauty and perfection. I have at this moment between twenty and thirty plants grown in this manner, not one of which is more than 10 in. high, the greater part with from four to seven or eight flowering branches, according to the nature or habit of the varieties, forming neat little bushes; indeed, some of them are not more than 6 in. in height, but yet full of flower-buds.

Chrysanthemums require plenty of pot room, and the richer the mould the better; but, when grown as dwarf plants, large pots would not harmonise with their character.

I am, Sir, &c.

J. Elles.

Palace Gardens, Armagh, Oct. 24. 1830.

Art. XI. *On a new Method of propagating Pinks by Layers.* By Mr. Thos. Fleetwood, Gardener at Donnington. Read at the Meeting of the Vale of Evesham Horticultural Society, April 17. 1828.

At the time of flowering, train the roots in the usual way of preparing carnations for laying; then take the old root in one hand, and the young branch intended to be layered in the other, and carefully divide them half way through by splitting them downwards with the finger and thumb, moulding up the wounded parts at once with some well sifted light vegetable soil. With the exception of the common red pink, all others succeed better by the above plan; and the saving of time over the usual way of propagating them is very considerable. The joint between the old and the young parts of the pink root being much harder than those lately formed, it is not so easily injured by the wire worm.

A small quantity of soot laid next the wounded part will preserve both pink and carnation layers from this destructive insect.

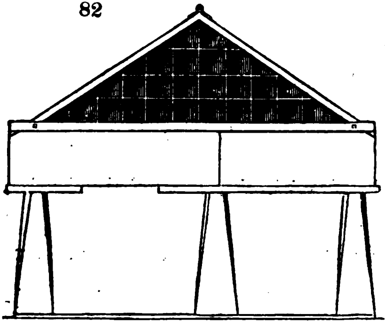
Art. XII. *Description of an improved Frame for forcing Cucumbers or Melons.* By T. A. Parker, Esq., A.M.

Where stable muck is easily to be had, it may be applied to this purpose at no expense beyond a little labour; and, if it be desired to pursue the plan upon an extended scale, hot water in metal pipes may be provided in aid of stable muck. Both together would make the arrangement particularly complete and economical.

It is my intention at present to limit the hot-bed to the smallest scale, and confine the plan to the application of stable muck; but I propose at no distant time, in another communication, to extend the arrangement, with the addition of pipes containing hot water.

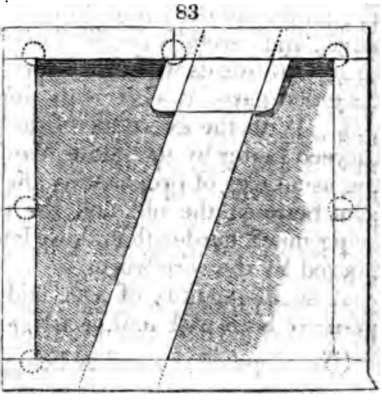
I have used a hot-bed of this kind for a few years with great success. I need not detail the quantity of fruit raised in this manner, because the practical gardener will immediately perceive the advantages of the plan; and, in truth, an accurate account of the produce has not been kept.

82



This hot-bed is about 6 ft. square in the clear, the stone sides or kerbs being about one foot high, presenting a glazed gable end to the south (*fig.* 82.), a boarded gable end to the north, and on the east and west two sashes on each side, about 4 ft. long by 3 ft. wide: the tops of the sashes being furnished with thimbles are hinged to a rod of round iron of about five eighths of an inch in diameter, running above the ridge board.

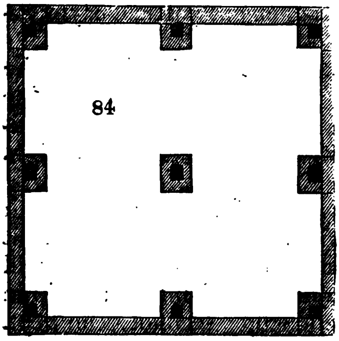
83



A platform of slate flags, supported by stone pillars of about 2½ ft. high, receives the stone kerbs, &c., (*fig.* 83.) and admits of the muck being removed wholly or in part, it being at first heaped up under and round the platform and stone kerbs. I have the advantage of being able to get slate flags so large as from three to four yards square, if desired, at the cost of 1*s.* 3*d.* per square yard, if squared;

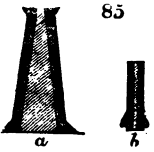
or 1*s.* a yard if of an irregular form, or triangular, measured only to the square, exclusive of carriage; and plenty of limestone or freestone to make the pillars.

Where the advantages of stone and slate flags do not occur, the most ready substitutes are stone flags or wooden planks for the kerbs, bricks for the pillars, iron rods for joists or bearers, and large roof slates, wooden stakes, or strong sticks laid across the bearers, for the platform. Upon the platform a thin layer of muck is to be put, then some turfs laid upside down, and lastly the mould. *Fig.* 84. shows the narrow kerbs and the tops of nine hollow pillars.


84

An excellent substitute for solid pillars would be something like the pipes used for the tops of chimneys, large at the base and smaller at the top (*fig.* 85. *a*); and if short pipes of small diameter (*b*) were introduced into the hollow pillars, and brought up through the mould under the glass, a plentiful circulation of warm and pure air would be furnished to the plants.

85



The mould being nearly level with the top of the kerbs, the morning and evening sun has uninterrupted access to the plants, while its meridian heat is moderated by the upright gable end to the south.

To facilitate the rotting of raw stable muck for horticultural or agricultural purposes, the litter is turned over, or generally moved to another place, and the labour of making a hotbed is little more than that. The weight of the hotbed is supported above the stable muck, and the muck, from not being pressed down, undergoes a brisker fermentation, and gives out the more heat. The small pipes communicating with the hollow pillars may be opened or stopped at pleasure, and a heat free from impurities may be communicated to the mould and the air around the plants, and regulated to a nicety which could not be obtained, as I believe, so completely in any other manner, not even by hot water within metal pipes.

I mention 6 ft. square in the clear as small dimensions for a hotbed; but the same plan is applicable to a wider frame from east to west, and the extent from south to north might be limited only by the means of supplying the heat required.

The slope of the sashes being quicker or less flat than in the usual hotbed sashes, the condensed steam runs off them with more certainty; and the glass is better able to resist the effects of hail. The interior of this hotbed might also be cleared away in winter, or at any other season, and room made for green-house plants; if the platform is movable, a height of from 4 to 6 ft. may be obtained, and the side walls renewed with stable muck or soil.

Sweeney Hall, June, 1829. T. A. Parker.

Art. XIII. *On a Method of growing the Melon.*

By Mr. John Lovell.

Sir,

The method I have adopted of growing the melon varies in one or two very essential points from any that I have yet seen practised; first, in well bedding and firmly rooting the plants, to support a good crop of fruit; secondly, in early setting and preserving the first fruit, and forcing the whole of the plants luxuriantly through the whole of the period necessary for their maturity.

To effect this, I prepare my bed with dung well watered and fermented, or tan; not wishing such a strong heat as for cucumbers. I sow the seeds in pots, in which the plants are to remain until they are turned into the hills, leaving only three plants in each pot. These I place on the dung in order to start them, as soon as the bed is made up, unless there should be another bed in use at the same time. As soon as the second rough leaf appears, I put a hill of good melon soil under each light, i. e. good loam and turf, adding a sixth part of good rotten dung, well mixed with the spade, but not sifted. This I water if dry, and tread in the hills firmly, making a hole in the centre, and turning out a pot of plants with the ball entire into each hole. Should the weather be very warm, I water them over head abundantly, and in the space of a fortnight they will have grown to four or five joints each. I then stop them down to three joints. By this time the heat of the bed will have become reduced to such a temperature as to allow of moulding up the plants, well treading in and watering as you proceed. As the plants will at this time be strongly rooted and in vigorous growth, in the course of three days they will have pushed a strong shoot from each of the three eyes in a horizontal direction; and they will seldom fail of showing fruit at the first joint; you may rely, at least, on two out of three of these fruit setting. Before the fruit comes to blossom the bed must be covered 1½ in. thick with dry sand, if it can be got, but mould will do; and do not water the bed any more for at least three weeks. This prevents the newly set fruit from turning yellow and damping off. All shoots that appear, except the three above mentioned, must be removed. As these shoots will show fruit at the first or second joint, if such fruit be set and taken care of, it will be three parts grown before the vines will have reached the outside of the bed, arriving at perfection in nearly half the time it would have done if the vines had been left in confusion.

Particular care must be taken, in pruning, never to stop the three shoots that bear the fruit, nor yet the lateral ones produced from the same joint as the fruit. These lateral shoots will show fruit at the first joint, which fruit must be preserved until the other is swelling; then take off this lateral fruit, but do not stop the vine. But should any accident happen to the other fruit, the shoot bearing it must be taken off, and the lateral shoot treated as a main one, when the fruit on it will swell accordingly; and all the laterals that spring from the main shoot must be stopped, leaving one joint and leaf only. I am, Sir, &c.

JOHN LOVELL.

Brecon, July 16. 1829.

ART. XIV. *On pruning and training Cucumber Plants.*

By Mr. W. P. VAUGHAN.

Sir,

I HAVE the *Encyclopædia of Gardening*, and the *Gardener's Magazine*, with some other practical works; all of which contain some excellent treatises on growing cucumber plants, but nothing is said about pruning them. I consider their productiveness as depending principally on pruning and the age of the seed, and I will therefore lay down my system of management.

As I save a few seeds annually, I have always some three years old. These I sow in shallow pans, in a dung heat not under 70°. By the time they spread the seed leaves, I have soil and 32-sized pots ready dried in the frames. I put a bit of broken pot on the holes, and such a small quantity of soil above it that when the plants are in they will but just reach over the rim of the pot. I then take up the seedlings, avoiding, as much as possible, injuring the fibres, and set three or four of them in each pot in the form of a triangle or square.

I fill the pots to within half an inch of the top, water them, and keep them in a brisk heat of from 65° to 75°. As soon as they have spread two rough leaves, I pick out the leading bud from each plant close to the second leaf, and in a few days each plant will put forth two shoots, and they are ready for plunging in the hills, without breaking the balls of earth; i. e. one pot in each hill. When these shoots have made two joints they must be stopped at the second, as before, and pegged down with a piece of straight stick, 6 in. long, broken half through in two places. (*fig.* 86.) Each shoot will now produce two more, which never fail to show fruit at the first joint, and must be stopped at the second; which operation must be done to all as they make two joints. Picking off the male blossoms, and setting the fruit as they open, should be done in the morning, just before the sun comes strong on the frames, until the weather will admit of the lights being open a great part of the day; watering should also be performed at the same time, shutting the frame close for a few minutes after.

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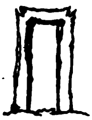

Cuttings of the ends of shoots, about 4 in. long, taken off close under a joint, and planted in a pot deep enough to admit a flat pane of glass on the top, will strike freely (see J. Mearns, in *Encyclopædia of Gardening*), and come into bearing sooner than seeds, but they are not of so long duration. I am, &c.

Archdeanery, Brecon,
April 22. 1829.

WM. P. VAUGHAN.

ART. XV. *On raising an early Crop of Peas, as practised in a Garden at Chichester.* By C. V. R.

Sir,

MR. MAIN's letter, in Vol. VI. p. 555. has induced me to communicate my method for raising an early crop of peas, which I have practised for the last twelve years with perfect success, and which will, I think, be found on trial decidedly superior both to Mr. Main's mode, and to the old one of transplanting peas, so well known to the gardeners in the neighbourhood of London. My method is this: —

In the first or second week in November, I select six dozen pots of the 16 size, and fill them within 2 in. of the top with light rich mould. I then sow all over the surface with the early frame pea, but not so thick as to touch each other. I make a little better than a quart sow the whole. The pots are then filled up with the same mould, and placed in a cool frame or vinery, protected from frost and the mice. In the first week of March they will be about 6 in. high, and the pots well filled with roots. Having made choice of a warm spot on a south border, they are now transplanted by digging a hole sufficiently large to receive the contents of each pot; care being taken not to disturb the roots, but to preserve the balls entire. They are planted in rows, 4 ft. apart, and 2 ft. in the rows, in the alternate manner, or that which some gardeners term "breaking the lines." If the nights should prove frosty, I cover each tuft with a flower-pot, and take it off every morning, which prevents them from receiving the least check. At the latter end of the month the pots are taken away, and the peas are sticked, each tuft separately, and inclining a little outwards at top, to allow the plants plenty of room to spread. This method is quite applicable to all dwarf-growing peas, which will never be found too thick: the air having a free circulation round each tuft, they begin bearing nearer the ground than those grown in the usual way and in parallel lines, and I find them bear much better. Peas are in general sown too thickly in the drills, and by that means they are drawn up so weak that they seldom produce any pods till arrived at their full growth, and then only near the top.

From the 1st to the 10th of May I generally gather my first dish of green peas; and I find the above number of pots will supply a family, upon an average, with three dishes of green peas per week till the first or second week in June.

The advantage of this method will, I think, be obvious to your readers: by it the plants receive no check in the transplanting; whereas in the common practice of transplanting they receive a severe check, from which they do not recover in less than a fortnight, and which, of course, may be considered a fortnight lost at this season of the year; nor indeed can it be expected they will ever grow so fine as when they receive no check. I never sow any peas in the open ground till January; and my kitchen-garden being rather on a limited scale, I find this no inconsiderable advantage, as it enables me to take a crop of winter vegetables off the very ground I intend for my peas; particularly off the ground I intend for my transplanted peas in March. I am, &c.

C. V. R.

Chichester, Jan. 1. 1831.

PART II.

REVIEWS.

ART. I. *Transactions of the Horticultural Society of London.* Vol. VII. Part V.

(*Concluded from* p. 187.)

THIS part, which concludes the volume, consists of a preface, table of contents, index, &c. In the preface, the council "congratulate the fellows on the great advantages already derived from the establishment of the Society, and on the very flattering prospect open to it for the future. It may be said to have given an impulse to the study of horticulture, not only in this country, but in all quarters of the globe, as is proved by the establishment of numerous provincial societies on the same model, and by the formation of similar institutions in Germany, France, the West Indies, and other countries."

The collections in the garden are increasing; and a large proportion of the most interesting of the new plants introduced has been distributed very generally among the Fellows. In the ornamental department, the most extensive and valuable introductions have been made by Mr. David Douglas from the north-west coast of North America. Mr. Douglas brought with him to England, in 1826, "a far greater number of plants and seeds than he had previously sent home." Of the species thus introduced, about 210 have been raised in the gardens of the Society; and, after having abandoned the multiplication of those which presented no other interest than as botanical curiosities, 130 species are now growing, and nearly the whole of them have been furnished to the Fellows, and to the principal public gardens in correspondence with the Society on all parts of the Continent. The peculiar value attached to these plants, which are hardy enough to bear our climate without any protection in winter, many of which are also distinguished by their great beauty, has induced the council to engage the same indefatigable collector to undertake a fresh expedition to the same country, with such additional means and assistance as the difficulties experienced by him in his former journey had rendered necessary.

"The contributions to the ornamental department received from various public gardens, as well as from private individuals, fellows and correspondents of the Society, both at home and abroad, have also been of considerable importance. Under this head the collection of Chilian plants discovered and introduced by Alexander Cruickshanks, Esq., and the Mexican plants raised from the seeds collected by J. G. Graham, Esq., in the mountains of Mexico, deserve to be particularly mentioned, as having furnished many new and beautiful hardy or half-hardy species. The hot-houses have been more especially enriched by the Indian collections transmitted by Dr. Wallich from the botanical garden of Calcutta, and presented to the Society by the Honourable East India Company, and also by a considerable number of very interesting plants, collected in the neighbourhood of Rio Janeiro, and presented by the late Sir Henry Chamberlayne. To Dr. Wallich the Society is also indebted for a variety of trees and shrubs from the mountains of Nepal, which have proved sufficiently hardy to be placed in the arboretum.

"In the fruit department, while the collections have been constantly augmented by communications with foreign gardens, the officers of the Society, by the direction of the Council, have been diligently applying themselves to the examination of the varieties, with a view of determining their respective merits or demerits. If no result has hitherto been made public, this has arisen from the extreme difficulty of the subject, from the repeated trials that are required, year after year, before a final opinion can be formed upon any given variety, and from an unwillingness on the part of the Council to authorise the publication of imperfect statements. Many thousand varieties have now been subjected to the most rigid scrutiny; and if there is still a great mass of matter requiring investigation among apples and pears, yet, with respect to other fruits, the state of information acquired at the garden is such, that reports upon a great number of them may be now immediately expected. An account of the varieties of the pine-apple has already been read before the Society, and will be followed by a constant succession of other reports, which will be printed in the *Transactions*, and which, it is confidently anticipated, will contain much important information. The details intended to be comprised in these reports will be best understood from the perusal of them when printed; but, in the mean while, it may be stated that the great objects that have been kept in view are, the simplification of the nomenclature, by the reduction of the synonymes to order; the investigation of the modes of cultivation best adapted to each variety, the effect produced by different kinds of stocks, and the determination of the respective qualities, with a view to rejecting worthless kinds and retaining the most important only for permanent cultivation. The fruits, when gathered, are deposited at the garden in a fruit-room, which is constantly open to the inspection of the public, and which, from the number of visitors to it, appears to excite univeral interest.

"The distributions of cuttings, seeds, and plants, made by the Society have been of the greatest importance, as well from the number and value of the articles, as on account of the accuracy with which their names and synonymes have been established. During the three years preceding the 1st of May last, no less than 28,367 parcels of seeds were distributed at the office in Regent Street, and 37,590 articles from the garden.

" All the Fellows of the Society have now the privilege of applying for plants and cuttings; and, when visiting the garden, they may receive such as are in sufficient abundance to be so distributed; the garden being open from nine in the morning daily until six in summer, and until sunset in the winter.

" The library of the Society, at their house in Regent Street, has continued to receive additions, by purchase as well as by donations. The models of fruit, the herbaria, and other scientific collections, have been transferred to the garden; where it is proposed to arrange them in such a manner as to render them of easy access, and to answer, as fully as possible, the purposes for which they were intended."

The present volume closes the first series of these *Transactions*

ART. II. *Memoirs of the Caledonian Horticultural Society.* Vol. IV. Part II.

(*Continued from* p. 336.)

42. *Notice regarding a Scarificator.* By John Gordon, Esq.

THIS gentleman has uniformly found the greatest benefit arise from cutting or slitting the rind of fruit trees when hidebound; but the practice, he says, is " of little use, unless carefully done down to the surface of the ground, or rather below, and likewise a little along the horizontal branches. I have often seen trees carefully done in this way in blossom several days before those not cut at all. By using a proper instrument, the slitting may be done in less than a minute per tree and the tree will want no more relief for some years.

This scarificator has a blade at each end; one for the stems of large trees, about half an inch long; and the other for small trees, in length about a quarter of an inch.

43. *Notice of an improved Garden Hammer.* (fig. 91. in Gard. Mag., vol. vi. p. 469.)

The use of the fulcrum is to facilitate the drawing of nails, without the risk of bruising the adjacent shoots.

44. *Description of, and Directions for using, a New Preservative Frame for saving Wall Fruit from being destroyed by Wasps, Blue Flies, or Birds, when it is ripe; and also for protecting the Blossom in Spring from Frost, and insuring a Crop of Fruit.* By Mr. John Dick, Gardener to William Trotter, Esq., of Ballendean. Read April 6. 1826.

Already described in the *London Horticultural Transactions*, and the Gardener's Magazine, vol. iii. p. 54.

45. *On the Cultivation of Strawberries.* By Mr. John Middleton, Tillychewan. Read Dec. 13. 1814.

Every gardener knows that it is a common practice to cut over strawberry plants in the month of October, " in order to make them push anew, and cover themselves, as it is termed, before winter. This part of the management I have been induced, from experience of its bad effects, to omit. I was at first led to this change from observing that a plot of strawberries which, through the hurry of business, I did not get dressed in autumn, produced very well next season; it immediately occurred to me, and in the same sentiment I now write this, that strawberries, and, in general, any herbaceous plants resembling them in habit, must be very much weakened by being made to produce two crops of foliage in one season. The winter residences of the shoots, which are to come forth next spring, must be thrown open, and the whole plants considerably weakened, by being forced to exert themselves in sending out a numerous and weakly set of autumnal leaves; and by these means a very sensible effect must be produced on the crop. I therefore make it a rule, after the crop is gathered, to cut away all the runners, and to clear the beds of all weeds; but I never touch the bodies of the plants in the way of cutting. I observe that during winter the shoots of next year are seen strong and healthy, under the shelter of the decayed foliage, from which they no doubt receive much protection."

Mr. Middleton, at the suggestion of Mr. Lang, gardener at Balloch Castle, never digs betwixt the rows of strawberries in autumn; because such a practice, " by cutting large quantities of the fibres at that season, must have the effect of injuring the plants almost as much as if they were transplanted. The new-made wounds are, by the ground being opened, exposed to the action of the frost; and the plants will, by this treatment, be kept in a weak and languishing state during the whole of next season. The only necessary operation, therefore, is, to give the whole ground a complete hoeing after the runners are cut off, to clear away the weeds; and, if the alleys on the outsides of the plots are dug, to cast a small quantity of loose earth on the whole ground, which will give it the appearance of being newly dressed. I have found, I think, great benefit from wheeling on, during frost, a quantity of well-rotted dung and pointing in the same, in the months of March or April, when the plants should receive their spring dressing; which must, of course, consist in cutting off the old haulm, clearing the plants of any weeds which may then appear, and digging the whole ground betwixt them. It must be obvious that cutting a few of the roots at this season will in no degree retard the growth of the plants, but, by the additional quantity of fibres produced in consequence of any incisions which may be made, will materially promote the same."

(*To be continued.*)

Art. III. *Catalogue of Works on Gardening, Agriculture, Botany, Rural Architecture, &c., published since May, 1831, with some Account of those considered the most interesting.*

In enumerating the contents of the Botanical Periodicals, those genera or species marked by a star (*) are not included in the first edition of the *Hórtus Británnicus.*

Curtis's Botanical Magazine, or Flower-Garden displayed. New Series. Edited by Dr. Hooker. In 8vo Numbers, monthly. 3*s*. 6*d*. coloured; 3*s*. plain.

No. LIII. for May, contains

3067. *M*ímulus *perfoliàtus. A yellow-flowered species of very recent introduction: it is possibly neither sufficiently hardy nor sufficiently beautiful to become generally cultivated. — 3068. Eránthemum stríctum. "As desirable as the well known E. pulchéllum; or, although the flowers are fewer than in that species, they are larger, and quite as beautiful in colour. It is a native of Nepal: hence it may probably be cultivated in a greenhouse." — 3069. Browállia *grandiflòra. Raised from seeds collected by Mr. Cruickshanks, near Yaza, in the valley of Canta in Peru. A plant of the same name was published in the *Bot. Reg.* for February: see our notice of it at p. 201. Dr. Hooker remarks: "the plant of the *Botanical Register* has the flowers considerably smaller and the leaves more cordate than in the plant figured by me from Dr. Graham, and appears to be raised from seeds of another kind of Browállia in Mr. Cruickshanks's herbarium, which I have rather been disposed to consider as B. demíssa." — 3070. Schizánthus *Hookèri. This welcome addition to the splendid flowers of our gardens surpasses in beauty all the previously known species of Schizánthus, which is high praise. It was collected "by Dr. Gillies, in various places on the Chilian side of the Cordillera of the Andes, at an elevation of 8000 or 9000 ft. above the level of the sea. The seed was sown in the spring of 1829, in the open border; and the plants not having flowered, they were taken into the house during winter, and replanted abroad in March. The flowers began to appear in June, and were abundantly produced during the whole summer. Thus treated, S. Hookèri has proved itself of biennial duration, at least; what its usual duration in this country may be, remains to be ascertained." — 3071. *Janìpha Mánihot*, Eatable-rooted Physic-nut, Bitter Cassada, Cassava, Manioc, or Tapioca. This plant has a root the size of a man's fist, which is yellowish, and abounds in a juice so poisonous, that if it be internally taken, it is fatal in a few minutes to cats, dogs, and man; acting on the nervous system. All the *Euphorbiàceæ* are essentially distinguished by their acrid and poisonous qualities; but it is a matter of remark and astonishment that the root of bitter cassada, when broken into pieces, and totally freed, by heavy pressure, from its venomous juice, yields, after it is dried and ground, an abundant flour, that is most extensively employed in lieu of bread throughout a very large portion of South America. A preparation of this root is even imported largely into our country, and served up at table, under the name of tapioca. Cassava bread is in the most general demand of any provision all over the West Indies, and is employed to victual ships. The use of tapioca is still more extended; and the great application of tapioca throughout Europe is for the same purposes as sago and arrow-root. There is another variety of cassava, but not described in this article farther than that it is " the Sweet Cassava of Browne's *Jamaica*, p. 350.; of Lunan's *Hort. Jam.*, vol. i. p. 163.; and the *Mánihot Aíssi* of Pohl: and its root is white, and free from deleterious qualities." Notwithstanding these two differences, the bitter and sweet cassava " seem not to differ in botanical characters. They are both especially cultivated in the colonies." " An acre of ground planted with manioc, or bitter cassava, yields nourishment to a greater number of persons than six acres cultivated with the best wheat; but it is probable that it greatly exhausts the soil." The mode of culture is this: — " After burning the felled trees, the lands are planted with cuttings of this plant. In 18 or 20 months the roots have attained their full size. During this time the farmer endeavours, above all things, to check the upward growth of the plants by breaking out their buds. Each plantation usually yields three crops, and is then abandoned. (*Spix and Martius's Travels in Brazil.*)" — 3072. Chrysophýllum *Cainìto*. A species of star-apple, a well known fruit of the West Indies, where, however, it appears to be more esteemed by the natives than by Europeans. In our stoves it recommends itself by the beauty of its leaves, particularly their brown and gold coloured, satin-textured under-side. It blossomed in the stove of the Glasgow botanic garden in November, 1830: its flowers are small, in colour yellowish white, and but rarely produced. — 3073. Argemòne grandiflòra. This splendid plant, " now not uncommon in our gardens, produces freely its fine white blossoms, with their orange stamens and brilliant stigma, through all the summer months."

No. LIV. for June, contains

3074. Dendròbium speciòsum. A much more perfect figure of this fine species than the original one in Smith's *Exotic Botany*, that having been drawn in New Holland by a person not skilled in botanical drawing. — 3075. Lobèl*ia* *hypocraterifórmis, Salver-*flowered* Lobelia. A purple-flowered interesting little plant, native of the southern shores of New Holland. — 3076. Broughtòn*ia* sanguínea, Scarlet-flowered Broughtonia. A showy orchideous plant. — 3077. Ornithógalum fimbriàtum. — 3078. Rhípsalis mesembryanthemöides. — 3079. Rhípsalis fasciculàta. — 3080. Rhípsalis *Cassýtha. These three species are published from the collection of William Christy, Esq., Clapham Road, by whom the technical descriptions *are supplied*: the three drawings are from the accurate pencil of Mr. *J. D. Sowerby.*

No. LV. for July, contains

3081. Colúmn*ea* hirsùta. A shrubby stove plant, climbing slightly, with very showy scarlet blossoms. — 3082. Drósera binàta. From New Holland. The plant figured sprang up out of soil imported thence to Kew, and Dr. Hooker suggests that the other New South Wales and Cape species may be successfully introduced, "if the seeds be kept in moist earth during the voyage." — 3083. Fritillària leucántha. A hardy white-flowered species, remarkable for the termination in a tendril of its linear-lanceolate leaves.— 3084. Anthéricum ? *plumòsum. Herbaceous, from Chile, with white plumose or bearded petals; curious. — 3085. Pteróstylis nùtans. Herbaceous, orchideous, green-flowered, and from New Holland. — 3086. P. cúrta. Another species, with more red in its blossoms. Both curious. — 3087. Farsèti*a* lunarioìdes. A hardy biennial, with yellow blossoms and moon-shaped silicles, thriving well if its seeds be sown in open borders whose soil is dry and calcareous.

Edwards's Botanical Register. New Series. Edited by John Lindley, F.R.S. L.S. &c., Professor of Botany in the London University. In 8vo Numbers, monthly. 4*s*. coloured.

No. III. of Vol. IV. for May, contains

1406. Cattlèy*a* guttàta. "The spotting of the flower in this species is remarkably different from any thing that has yet been seen in the same genus. It may be interesting to cultivators to know that what are called the stems of this genus, and indeed of many other orchideous plants, that is to say, the erect stalks that bear the leaves, are analogous to tubers, and really the branches of a rhizòma, or prostrate stem, which creeps upon the surface of the ground, resembling a root, and that consequently each of the leaf-bearing branches may be safely cut off with a portion of the rhizoma attached for the purpose of propagation. The gardener of Mr. Harrison of Liverpool has practised this method with great success." — 1407. Azàlea calendulàcea var. *Stapleton*iàna*. "The fourth of the Highclere azaleas, named in compliment to Lady Harriet Stapleton, daughter of the Earl of Caernarvon. This lovely variety is perhaps the most beautiful that has been raised among those hybrids in which the characters of A. calendulàcea preponderate, as in this the prevailing colour is a rich deep rose, with no more yellow than is just sufficient to soften the general tint." — 1408. *T*rifòlium vesiculòsum. A species of clover occasionally met with in English botanic gardens; pretty in its blossoms, and interesting in its bladder-like calyxes: set down here as perennial, but usually considered annual. — 1400. *J*asmìnum Wallich*iànum*. Professor Lindley has been here unfortunate in overlooking Mr. David Don's name and description of this species in the *Pródromus Flòræ Nepalénsis*. It is there called *J.* pubígerum, this epithet being expressive of a short and possibly deciduous pubescence, which is obvious enough on the imperfectly expanded, and recently expanded leaves. The figure in *Bot. Reg.* exhibits none of this pubescence, except on the calyxes of the blossoms. "It is perfectly hardy, and must be considered a great addition to our shrubberies." — 1410. Alströmèr*ia* pulchélla var. *pilòsa. This variety differs from the original in having its leaves fringed with long hairs, and its sepals deeply and distinctly serrated. A. pulchélla and its varieties "would probably prove quite hardy if grown on a south border, covered in winter by a wide sloping thatched roof, such as is now in use, with great success, in the garden of the Horticultural Society. But the safest way to treat [all] the species of Alströmèr*ia* is to plant them in light loamy soil, in a border within a glazed pit, which is just heated enough to keep out frost in winter. Here they will grow with great vigour, throwing up strong suckers in all directions, and flowering beautifully: their leaves will not, on the one hand, be parched by the drying cold winds of April, nor, on the other, scorched by

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the sun at midsummer. Thus protected, they will perform all their natural functions as if in their native soil; and an abundance of food will be sent downwards into the roots, which will thus be prepared, upon the return of the growing season, to send up new shoots with the greatest vigour." — 1411. Gaulthèria *Shállon.* (*fig.* 87.) This elegant evergreen is dwarf and small in English gardens, but in the pine and oak woods of Columbia and of other parts of north-west America, it " grows beneath the dense shadow of these places where few other plants will live, and there attains the stature of a man." By layers and suckers, and by seeds, which it is disposed to produce in England, it may easily be multiplied to any extent. *Shállon* is the name given to the plant in Colombia, where its agreeably flavoured berries are much esteemed. — 1412. Potentílla *missoúrica. A plant of botanical interest only. " It is no doubt one of the plants confounded with P. argùta of Pursh, from which it is nevertheless extremely different. It is nearly related to P. pectinàta of Fischer, which is wrongly referred to P. pennsylvánica, as a synonyme, in De Candolle's *Pródromus.* From P. pectinàta of Fischer, P. missoúrica is known not only by its hoariness, but also by the nakedness of its inflorescence, by its minute petals, and more deeply pinnatifid leaflets." — 1413. Turræ̀*a* *pinnàta, Winged-*leaved* Turræ̀a. A pretty, rare, and tender stove shrub; native of the neighbourhood of Silhet. Its pale rose-coloured blossoms are produced three or four in a cluster; they are 1½ in. in diameter, a magnitude not very frequent in the *M*eliàceæ. — *R*hododéndron *alta-clerénse, the Highclere Rhododendron. A superb hybrid, raised at Lord Caernarvon's, by Mr. Gowen, the intelligent and meritorious gardener there, The brilliant crimson flowers and fine foliage of *R*hododéndron arbòreum cause that plant to be desired by every one who has seen it in bloom, a gratification we have experienced at Mr. Knight's nursery in the King's Road; but then that is from India, and too tender for the open air of Britain. In consequence of this the same admirable properties become very desirable in some hardy American species that will stand our winters. These, however, no North American species at present known fully possess; and, as " necessity is the mother of invention," advantage was taken by Mr. Gowen of the well known susceptibility to hybridise existing among *R*hododéndra and other *R*hodoràceæ, to create by cross impregnation a plant that should possess the properties required. To this end, a hybrid bred between *R*hododéndron pónticum and *R*. catawbiénse was chosen as the female, and its ovula impregnated with the pollen of the magnificent *R*. arbòreum. From the seeds so impregnated " above 1800 plants were raised, which have been extensively distributed to nurseries and private gardens both in England and Scotland;" and out of the plants retained at Highclere has bloomed the splendid hybrid figured in the *Register*, and of which Professor Lindley thus remarks: — " To the hardiness of *R*. catawbiénse is added the arborescent habit and rich colours of *R*. arbòreum; while the contracted clusters of *R*. arbòreum are exchanged for the spreading clusters of *R*. catawbiénse. " In *R*hododéndron alta-clerénse every thing of beauty that a plant can possess seems collected, fragrance alone being wanting. With a clear transparent crimson colour, rendered still more bright by a few distinct spots of a darker hue, are combined a fine bold outline, a great breadth of surface, and the utmost symmetry; while the deep rich green of the magnificent foliage forms a background in the most perfect harmony with the lovely tints of the blossoms." Mr. Gowen, in a letter to Mr.

Lindley, which is published, and contains the genealogy and history of this and the other seedlings, says " they are quite hardy, having never been damaged in the slightest degree by the winters of this climate; but they are very excitable, shoot very early, and will therefore, in early springs, be liable to be injured by late frosts. They make extremely vigorous growth, and, judging from the analogy which I have observed to prevail in hybrid productions, I am inclined to believe that they will attain to the height of 20 ft. and upwards. Their foliage is very ornamental." — 1415. Epidéndrum *odoratíssimum. " A delightfully fragrant epiphyte, native of woods near Rio Janeiro. It is easily cultivated in decayed moss and wood, well drained, and placed in a hot damp part of the stove." Professor Lindley states that this is the plant which Dr. Hooker has published as Encýclia pàtens, and Mr. Loddiges as Macradènia lutéscens; but that it is quite distinct from the Macradènia lutéscens of the *Botanical Register.* — 1416. *Cr*òcus vérnus var. *leucorhýncus, White-beaked vernal Crocus; or, as it is called in the gardens, the Pheasant's Feather Crocus. " A pleasing variety, whose flower is white, except a ring of clear deep blue, near the tip of the flower: the tip itself is white, and the beauty of the variety is owing to the very pleasing contrast of the white of the tips, and the clear deep blue on which it reposes." The white tips are what is meant by leucorhýncus or white-beaked. Drawn from the Horticultural Society's garden. — 1417. Habránthus *phycellöides. A pretty species, which appears to be the connecting link between the genera Habránthus and Phycélla. The flower is scarlet in the limb, yellowish in the tube. — 1418. Glýcine *bíloba. Published from the nursery of Mr. Tate; who states " that it is a desirable conservatory twiner, attaining the height of 20 ft., and covered from bottom to top with a profusion of [violet-coloured] blossoms." It does not succeed when planted out of doors. Introduced from Mexico in 1827. — 1419. *Tùlipa* óculus sòlis var. *præ'cox, Early Sun's-eye Tulip. This variety produced its crimson blossoms in the middle of March. Its bulbs were collected by the Hon. T. F. Strangways, in the cultivated grounds belonging to Mr. Baring's villa, near Florence. It must not be confounded with the tulip of the same name, described by Tenore, which Mr. Strangways considers the *Tùlipa* Ráddii.

No. V. for July, of Vol. IV., contains

1420. *Galipèa* *odoratíssima. A stove plant, from Rio Janeiro, abounding in broad deep green leaves, which are from one to two feet long. Thrives in a mixture of peat and loam in a pot plunged in a tan-pit; flowers in May, when the air of the hot-house is perfumed as if with jasmines. The period of blossoming lasts some time. — 1421. Kennèd*ia* inophýlla. With fine foliage and beauteous clusters of scarlet blossoms. Like all of its family, a twiner. — 1422. A species of *C*ássia, with numerous large pale yellow blossoms, and large green leaves of numerous leaflets. — 1423. Hòve*a* purpùrea. A beautiful evergreen shrub, whose branches are elegant wreaths of purplish lilac blossoms. — 1424. *R*ùbus *spectábilis. An upright shrub, 3 ft. to 4 ft. high, with leaves of three leaflets, and rich deep rose blossoms; of easy culture, and strikes by cuttings under a hand-glass. — 1425. *Bérberis A*quifòlium. 1426. *B.* *glumàcea. Two of the American berberries, called by some Mahòn*iæ*, with fine pinnated evergreen leaves, and clusters of yellow blossoms.

The British Flower-Garden. New Series. By Robert Sweet, F.L.S. &c. In 8vo Numbers, monthly. 3*s.*

No. XXIV. for May, contains

93. *D*ictámnus *angustifòlius. This species differs from both *D.* Fraxinélla and *D.* álbus, in having the divisions of its calyx equal. It was raised in the Chelsea botanic garden by Mr. Anderson, in 1821, from seeds he had received from Dr. Fischer. It is a valuable addition to the stock of hardy

ornamental herbaceous plants. — 94. Mahònia *diversifòlia. A new species of this peculiar and interesting form of the berberry tribe. The racemes of bright yellow blossoms are represented to be very numerous, and contrast strongly and agreeably with the fine glossy evergreen leaves.—95. *R*hododéndron *Farrèr*æ*, *Mrs.* Farrer's Rhododendron. "This beautiful and interesting species, which unites, beyond doubt, Azàlea with *R*hododéndron, was brought by Captain Farrer, in 1829, from China; and Mr. Tate, from whose nursery it is published, proposed its specific name, in compliment to Mrs. Farrer, resident at Blackheath. It will doubtless endure our winters in the open air, as it is subdeciduous."— 96. *O*'xalis Dépp*ii*, *Dr.* Deppe's Wood Sorrel. "This most beautiful *O*'xalis flowered with us last year, from March to November; and, if grown in a pot, and protected in the green-house in winter, it would most probably continue flowering all through the winter. But both *O.* Dépp*ii* and *O.* floribúnda succeed well in a south border, with no other covering than a pot placed over them in severe weather, and a mat over the pot: the only protection necessary for those and numerous other half-hardy plants. The *O.* Dépp*ii*, as in this situation it loses its leaves in winter, may be taken up and kept in a warm dry place till spring, and then replanted: this is how we treated our plant."

No. XXV. for June, contains

97. *Tùlipa* rèpens. A yellow-flowered species, spreading extensively by subterraneous stolones; as ornamental as *T.* sylvéstris, which it much resembles, but distinguishable by a sufficiency of technical marks. — 98. *C*ròcus *Imperàti. A species of so late introduction as 1830; native of Naples, with large lilac-coloured blossoms produced in spring. It is a very desirable kind. — 99. *Ganymèdes (*Ganymedes*, Jupiter's cup-bearer; flowers with large cups.) pulchéllus. The beautiful *N*arcíssus pulchéllus of old nomenclature.

100. *Bérberis* *dúlcis, Sweet-*fruited* Berberry. "An evergreen, shrubby, beautiful species, lately introduced from the Straits of Magellan, where its berries are used as we use gooseberries, both green and ripe, for making pies, tarts, and other sweetmeats or preserves; for which purposes they are excellent. The berries are abundantly produced, and when ripe are black and of the size of a black currant. It will, doubtless, be quite hardy; and its elegant, nodding, bright yellow flowers, which are produced singly along the branch, and not in bunches, added to its very useful fruit, will render it a valuable addition to our shrubberies. In its native state it grows from 4 ft. to 10 ft. high. It was collected by Mr. Anderson, botanical collector in Captain King's expedition to the Straits of Magellan, and to other parts of South America. Mr. Anderson states that *B.* dúlcis extends from Chiloe to the Straits of Magellan, but that the plants in Chiloe are larger and deciduous. From these two characters the plants in Chiloe will, doubtless, prove of a distinct species. Both the kind from Chiloe and *B.* dúlcis are now growing in Mr. Lowe's nursery, Clapton, where *B.* dúlcis flowered in March last, but under glass, and where also another species, that pretty little dwarf evergreen shrub, *B. e*mpetrifòlia, has recently blossomed. *B.* dúlcis may, doubtless, be readily increased by layers, by inarching on *B.* vulgàris, or by young cuttings planted under bell glasses in pots of sand. A mixture of sandy loam and peat will be the fittest soil for it."

No. XXVI. for July, contains

101. A'ja*x* cérnuus, single and double. Two most desirable border flowers, of easy culture, but at present rare. Till they become abundant, A'ja*x* (*N*arcíssus) tortuòsus, which resembles them, and is more prevalent, may be substituted. — 102. *Tùlipa* óculus sòlis, Sun's-eye Tulip. Two varieties, both beautiful, and of easy culture. Figured from the Chelsea botanic garden. These and several other species were imported from Italy by the Apothecaries' Company as colchicum roots. — 103. Aquilègia Gar-

nier*iàna.* A beautiful hybrid, raised by Miss Garnier of Wickham, Hants, from seeds of A. sibírica, from flowers impregnated with the pollen of A. vulgàris. It nearly equals A. sibírica in beauty; the sepals of its flowers are bright purple, and the petals are partly purple, partly of a bright straw colour. — 104. Wistàr*ia* frutéscens.

The present number completes vol. i., and the accompanying titlepage states that *The British Flower-Garden* includes "hardy plants, or those which are somewhat tender, but may still be cultivated in a warm border, needing only a mat or a garden pot to be placed over them in severe frost: some will even require both expedients." † It is also further observed: — "We intend, in the succeeding volumes, to introduce some of Mr. Knight's showy New Holland plants, or those from other collections, as the greater part of them will succeed well by the side of a wall, in a warm border, with no other protection than a mat in severe frost; or if some straw or rushes are sewed inside of it, all the better; the bottom of the plant being tied round with dry hay or straw, to keep the bark from cracking with the frost. By these means the beautiful productions of New Holland, as well as of Mexico, Chile, Chiloe, the Straits of Magellan, and Peru, may be cultivated with success; and the Cape bulbs will succeed well with no other protection than a mat in severe weather; or the bulbs may be taken up in autumn, kept dry through the winter, and be planted out again in spring." A list of books quoted, an index arranged according to the natural system, an alphabetic Latin index, and an alphabetic English one, of the plants figured in the volume, are added.

Botanical Cabinet. By Messrs. Loddiges. In 4to and 8vo Parts, monthly. Large paper, 5*s.*; small paper, and partially coloured, 2*s.* 6*d.*

Part CLXIX. for May, contains

1681. Justíc*ia* *aspérula. "It appears to be a low shrubby plant, producing its elegant flowers in great abundance, and in long succession." — 1682. — Hàke*a* oblìqua. — 1683. Alstrœmèr*ia* *Salsílla.* — 1684. Corræ'*a* pulchélla. — 1685. *E*rìca droseröìdes. This elegant plant stands in our *Hórtus Británnicus* as a variety of glutinòsa. — 1686. *E*rìca *Beaumonti*àna.* "This kind was raised by Mr. Rollison, who has named it in honour of Mrs. Beaumont, whose celebrated garden at Bretton Hall, in Yorkshire, is well known to most plant collectors. It is a dwarf kind, bushy, and flowering abundantly in the beginning of summer. The blossoms in their shape and colour remind us of those of the lily of the valley. — 1687. Zygopétalum *crinìtum. The flowers of this fine and distinct species "are fragrant; and the markings on the labellum are composed entirely of short stiff hairs." — 1688. *C*éstrum *l*aurifòlium. — 1689. *P*tèris *calomélanos. "This beautiful fern, being from the Cape, will probably be found to thrive in a temperature cooler than that of the stove." — 1690. Vernòn*ia* *axilliflòra. A desirable plant, as its purple blossoms form a relief to the yellow flowers which predominate at the time Vernòn*ia* will blossom, if treated as a frame plant. Introduced by the late R. Barclay, Esq., who was justly celebrated for the number of new species which he introduced through his valuable foreign correspondence, and for his kind and liberal communication of them. At the sale of books, Messrs. Loddiges purchased, among others, a book in which his name and the date of 1781 were inscribed in his own handwriting; thus proving Mr. Barclay's devotion to botany and gardening to have been of 50 years' standing.

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† Our correspondent E. will perceive that this declaration of the scope of the work anticipates his criticism on the admission of plants not strictly hardy into it. We now, therefore, leave it to E. to modify his criticism to the remaining circumstances, or to forego it. — *J. D.*

Part CLXX. for June, contains

1691. E'pacris impréssa. Like all of the genus, beautiful. — 1692. Adésmia *microphýlla. " A low shrubby green-house plant, producing its scattered yellow pea-shaped blossoms at various seasons. From Valparaiso. Grows in light loam. — 1693. *C*ánna pàtens. — 1694. Caméll*ia* japónica *variegàta símplex. A pleasing and distinct variety;" one of those raised by Mr. Press, as noticed in this Magazine, Vol. II. p. 358. The single white flowers are produced freely and early, and " are delicately and beautifully streaked with red."—1925. *Æ*rìca præ'stans.—1696. *Æ*rìca vestìta cárnea. — 1697. *F*ìcus *urophýlla, Tail-leaved Fig. From India in 1830. " Seems of dwarf growth, as at the height of 2 ft. it was loaded with pretty but dry and tasteless fruit. Stove; cuttings; loam and peat. — 1698. *O*thónna *a*brotanifòlia. — 1699. *S*axífraga virginiénsis. — 1700. *A*splènium monánthemum.

Part CLXXI. for July, contains

1701. *Bérberis* *glumàcea. " Common in shady pine forests on the coast of the Pacific." Flowers in spring; blossoms yellow. Thrives in soil composed of loam and peat, and admits of increase by cuttings or layers. — 1702. *Æ*rìca plumòsa. A pretty species. — 1703. *E.* serratifòlia.— 1704. *A*nemòne acutipétala. A pretty hardy Swiss species, near upon the pasque flower of Britain. Likes light loam, and increases by seeds. — 1705. Bignòn*ia* *grácilis. A climber, attaining the height of 50 ft., with very showy bright yellow blossoms, opened in April. Not very tender, and therefore desirable to cover the colder parts of a stove where more delicate plants would not thrive. Likes light loam, and increases by cuttings. From South America? — 1706. Aubrièt*ia* purpùrea. Mr. George Don has just (July 16.) informed us that this plant must henceforth be named A. *h*esperidiflòra. The epithet purpùrea was first applied to it on the assumption that it and *A*'rabis purpùrea of *Flòra Græ'ca* were identical: the latter has been subsequently proved quite distinct, and a true *A*'rabis.—1707. Caméll*ia* japónica Róss*ii*. " A very fine variety, raised by the late Mr. William Ross, of Stoke Newington, who was an unassuming and ingenious cultivator, and one of the first persons who obtained new varieties of these popular plants from seeds. — 1708. Pimelèa *diosmæfòlia. A pleasing species, intermediate between decussàta and *r*òsea, and flowers through the summer. Flowers rosy. — 1709. *Govèn*ia* (? Mr. Gowen, gardener to Earl Caernarvon) *supérba; *O*rchídeæ. From Xalapa, in 1828. Flowered in March, 1831. Flowers yellow and orange, delicately fragrant, produced before the leaves, and very durable. Likes vegetable earth, with a little sand, and the stove. — 1710. *A*'rabis undulàta. A white-flowered species; ornamental.

The Botanic Garden. By B. Maund, F.L.S. &c. In small 4to Numbers, monthly. Large paper, 1*s.* 6*d.*; small paper, 1*s.*

No. LXXVII. for May, contains

305. Linària alpìna. The well known miniature beauty. Plants and flowers " are objects of agreeable interest to every one who possesses a garden, unless that possessor be one whose mind is so chained down to mother earth that he never can raise an eye of satisfaction upon the beauties of her vegetable children. These portray too much happiness — too much of the spontaneous loveliness of nature, to meet even the placid contemplation of some few, very few, morbific souls." L. alpìna may be abundantly increased by seeds or cuttings. Arid soil promotes its health and beauty. — 306. Georgìn*a* supérflua. A globe-flowered variety. — 307. *D*ictámnus *F*raxinélla. — 308. *M*ímulus lùteus var. rivulàris.

No. LXXVIII. for June, contains

309. *P*hlóx pilòsa. " The various species of *P*hlóx, and the very different characters which they assume, render one portion or other of the genus desirable in almost every situation. A part of them submissively

creep on the surface of the earth, as though they desired to protect it from the increasing heat of the opening summer; while others elevate themselves in autumnal beauty, over their more humble neighbours, and irresistibly demand attention to their self-appropriated mantles of pink or snowy flowers. Many intermediate species are also highly attractive, and progressively adorn the parterre, throughout the season of the garden's cheerful triumph." The tall autumnal-flowering Phloxes, in light soils and hot summers, have their growth much checked by drought. To prevent this, plant them in loamy soil, or in a moist or shady situation: the *A*sclèpias family requires similar treatment. — 310. *L*upìnus perénnis; but the hairy foliage leads one to suspect that *L.* nootkaténsis, a much more common plant, is the species figured. — 311. *Pæònia* edùlis var. Whitlè*ii*. *P.* edùlis, which is called *P.* albiflòra by some authors, "includes varieties with both double and single flowers, and these also varying from almost white to a deep rose colour: hence the name albiflòra, or white-flowered, becomes objectionable. The term edùlis, or eatable, is preferable, as it is expressive of the uses made of the root and seeds in Siberia, where some of the varieties are native." The Siberians stew and make a pottage of the tubers: if these tubers, however, resemble in odour those of *P.* officinàlis, we do not desire to partake of the dish. Most of the varieties of pæony produce seeds, which grow readily, if perfect, and sown as soon as they are ripe. Professor Lindley, in his late lecture, showed that the double *P.* officinàlis is capable of producing seeds, if its stigmas be artificially dusted over with pollen from a single kind; as, notwithstanding the multiplication of petals in that variety, its germens and stigmas are frequently perfect. — 312. *B*etónica incàna. — This number is accompanied by an engraved dedication, for the third volume, to Her Majesty the Queen, who patronises this little work.

No. LXXIX. for July, contains

313. Azàlea calendulàcea. — 314. Rudbéck*ia* hírta, the Centrocárpha hírta of Don. The perennial species of Rudbéck*ia* with undivided leaves, and yellow rays to their flowers, now constitute the genus Centrocárpha of Don, who restricts Rudbéck*ia* to R. laciniàta, digitàta, pinnàta, &c. The Centrocárphæ are all very ornamental, love shade and moderate moisture, and should every spring be taken wholly up, their creeping rootstocks pulled asunder, and separately replanted. A very freely growing and blooming species is much about by the name of Rudbéck*ia* Newmánn*i*. The origin of this name is unknown; whence Mr. Sweet, in publishing the plant in his *Flower-Garden*, called it R. acutifòlia. This has since been found to be a species previously published as R. chrysómela (golden rays and black centre), and is now the Centrocárpha *chrysómela of D. Don. — 315. Campánula pyramidàlis. Mr. Maund, in representing this plant as increasing by suckers, seems not aware of the practice of growing it extensively and readily by segments of its roots. Divide in April or May the roots that are as thick as a quill into two-inch lengths, and plant these segments perpendicularly, and so as just to cover the top of each. Herbage will soon sprout forth. The sprouting shoots of the plants will also strike as cuttings under a hand-glass, but only very partially. Seeds produce the finest plants: these are produced oftener than is imagined, and should be sown as soon as ripe. The plants they produce, if in encouraging soil, bloom magnificently in the second year. There is a white-flowered variety of this species, as well as one with its leaves elegantly variegated. — 316. Pentstèmon *r*òseus.

*Chandler and Booth's Illustrations and Descriptions of the Camell*ièæ. In Imperial 4to Parts, every three months. 7*s.* plain; 10*s.* coloured; and 18*s.* extra-size.

Part VIII. for May, contains

29. Caméll*ia* japónica *r*òsea, *Middlemist's* Rose Japanese Camellia,

usually called Middlemist's red Camellia. The flowers open late, are of a rich rose colour, more than semidouble, and 3 in. or more in expansion. The stamens are sometimes perfect, but oftener transformed into small petals, so that the flower resembles altogether a full-blown rose.

30. Caméll*ia* japónica eclípsis, *Press's* Eclipse Japanese Camellia. One of the charming hybrids originated by Mr. Press, noticed in Vol. II. p. 358. Both C. eclípsis and C. punctàta were raised from seeds contained in one capsule. " The flowers of C. eclípsis are handsome and well formed; the petals being numerous, neatly imbricated, and their ground colour white, which is striped and spotted with pale red, in the manner of a run carnation." Mr. Booth considers the flowers not superior in form to those of the double white, as stated in Vol. II. p. 358., as he deems the flowers of the double white unsurpassed in form by those of any variety in cultivation.

31. Caméll*ia* japónica insígnis, *Chandler's* splendid Japanese Camellia. " This is a favourite variety with most cultivators, and there are now few collections in which it does not hold a conspicuous place." To this variety Caméll*ia* japónica Knìght*ii* approximates closely; the latter was raised by Mr. Knight, of the King's Road, Chelsea, and is figured in Loddiges's *Botanical Cabinet,* 1463. It is also the variety No. 19. dianthiflòra of Loudon's *Hórtus Británnicus.*

32. Caméll*ia* japónica *speciòsa, Showy Japanese Camellia, or Rawes's variegated Waratah. The flowers of this, the Caméll*ia* Rawes*iàna* of the gardens, are exceedingly handsome, of a very deep red, open very regularly, and are usually 4 in. in diameter. It was imported by Captain Richard Rawes, in 1824, and by him presented to his relation, T. C. Palmer, Bromley, Kent, whence all the plants in the country have emanated. The Horticultural Society has two plants, sent from Canton, by John Reeves, Esq., in 1828, which are expected to prove the same.

The Florist's Guide and Cultivator's Directory, &c. By Robert Sweet, F.L.S. &c. In 8vo Numbers, monthly. 3*s.* coloured; 2*s.* plain.

No. XLVII. for May, contains

185. Rose Bacchus Tulip. " Flower spreading open; sepals (petals of old) obovate, rounded and emarginate at their tips, white, marked with numerous broken purplish or chocolate-coloured marks up the centre, the edges of the same colour, feathered inwards with a sort of rosy stripes." Drawn from Mr. Pile's collection, Cambridge Road, Mile End. — 186. Hogg's Magnificent Auricula. " Umbel or truss large and spreading, many-flowered. Limb of the flowers spreading flatly open; the mouth large, and of a pale greenish yellow, surrounded by a circle of pure white, and this white encircled by a ring of dark purple; from the purple to the margin is bright green, and the margin itself is white." Mr. Hogg's price for this fine variety is 7*s.* 6*d.* — 187. Robert Bruce Ranunculus. "Flowers very double, and handsomely formed, the petals of a pale straw-colour, more yellow towards the centre, edged with a brownish purple that is feathered inwards." Raised by Mr. Waterston, of Paisley. — 188. Prinz von Oranien Picotee. " A fine variety of yellow picotee, drawn from Mr. Hogg's rich collection, at Paddington Green, who sells it at 10*s.* a plant. The " flowers are large, consisting of several circles of petals having a yellow ground, very much stained and lined with red and dark purple." The following remark by Mr. Sweet well deserves the attention of the philosophic florist and gardener: — " As the yellow picotees are rather more tender than the other varieties, they are generally cultivated in pots, in light soil: we should think lime rubbish, mixed with peat, would suit them best, as all of the family of Diánthus are fond of growing

in the crevices of old walls, for which lime rubbish is a substitute; while the black peat soil, mixed with it, would be likely to improve their colours."

No. XLVIII. for June, contains

189. Duke of Wellington Rose. This beautiful hybrid was raised from a seed of the *R*òsa índica, which had been impregnated with the pollen of *R*òsa damascèna. There is scarcely a more splendid rose grown, and it is almost unequalled for the abundance of its flowers: these are of a rich dark red colour, and produced all through the spring and summer. In its productiveness of blossoms it most resembles the female parent, *R*òsa índica; the common China, or as it is frequently called "monthly" rose, now happily a prevalent ornament to the fronts of houses all over England. "The best stocks on which to bud, or otherwise work, most roses, are the stems of *R*òsa tomentòsa, as this is a free and strong growing species." The Wellington Rose is published from Whitley's nursery. "Mr. Smith, of Coombe Wood, will have several very distinct and curious hybrid roses in flower this season; among the rest he has a seedling, from *R*òsa odoràta var. flavéscens, with leaves like those of the yellow Austrian; this must certainly be fine, and will doubtless be yellow in colour. — 190. Caledonian Hero. — 191. Lady Haggerston's Pink. — 192. Nestor Ranunculus.

A Monograph on the Suborder V. of Amaryllídeæ, containing the Narcissíneæ. By Adrian Hardy Haworth, Esq. F. L. S. &c. Published as an Appendix to the First Volume of the Second Series of Sweet's *British Flower-Garden*, and obtainable with the 25th Number of that work. Also, separately, in royal 8vo, price 2*s.* 6*d.*

This is a useful contribution to systematic botany, and a valuable and indispensable manual to the students and cultivators of this group of plants. Like all this author's productions, it is the fruit of a long course of patient and practical application to the subject. Mr. Haworth has for "half a century" sedulously collected, cultivated, and studied the *N*arcissíneæ, those choicest ornaments of the hardy garden, for their beauty, fragrance, and precocity. His diligent research has been rewarded by the discovery of 148 species, besides numerous varieties, most of them now existing in Britain; and many of the remainder once did, as testified by Parkinson and other old writers, and Mr. Haworth supposes still may in old country gardens. (See his enquiries respecting "Lost or missing hardy Bulbous Plants," Vol. VI. p. 368., VII. p. 247.) His analytical investigation of these plants, during the period mentioned, has acquainted him with such discrepancies in their structure and habits, as, to his mind, utterly forbid the longer association of them in one genus. He has divided them into sixteen, and founds their distinctions on differences in the structure of the flower and fruit; and, subordinately, on differences of habit also. The specific characters are derived from the relative proportions of all the parts of the flower to one another and to the fruit, the proportions between all parts of the habit, and from the colours of the flowers and foliage. Mr. Haworth finds the characters derived from the relations of proportion to be indelible: and that colour, in this natural group, in Crassulàceæ, and elsewhere, also supplies trustworthy characters: Mr. Brown has attested the validity of characters derived from colour in the umbelliferous plants.

Mr. Haworth's genera, thus constituted, are the following, which we leave for botanists to discuss; begging however, in so doing, to subscribe our own admiration of the congruity evident in his generic assemblages.

1. Corbulària *Salisbury* (*corbula*, a little basket, which the large crowns resemble), 10 species; the Hoop-petticoat family. 2. A'ja*x* Haworth (the brave Greek in the Trojan war), 24 species; the Daffodil family. 3. Oíleus *Haw.* (the lesser Ajax of the poets), 5 species; the Clipt-trunk

family. 4. Assáracus Haw. (a brother of Ganymedes), 2 species. 5. Ilus Haw. (also a brother of Ganymedes), 2 species. 6. Ganymèdes Haw. (cupbearer to the gods, crown of flower cup-shaped), 5 species: *N.* pulchéllus and the species near it. 7. Diomèdes Haw. (a valiant Greek at the siege of Troy), 3 species; *N.* MacLeàyi of *Bot. Mag.* being one. 8. Trós Haw. (the father of Ganymedes), 2 species; one, the *N.* galanthifòlius. 9. Quéltia Sal. (*Nicholas Le Quelt,* a rhizotomist in the days of Parkinson), 7 species; the *N.* incomparábilis, and the approximate species. 10. Schizánthes *Haw.* (*schizō* to cut, and *anthē* a flower; the crown deeply gashed), 1 species; the *N.* orientàlis, *Lin.* 11. Philógyne *Sal.* (*phileō* to love, *gynē*, a woman; approximation of anthers to stigmas), 9 species; *N.* odòrus *Lin.* the type. 12. *Jonquílla* Haw. (French word for a little rush; leaves like rushes), 4 species, the Jonquils of the gardens. 13. Chloráster *Haw.* (*chlōros* green, *astēr* a star; rays or segments of the perianth forming a green star), 2 species; one the *N.* viridiflòrus of *Bot. Mag.* 14. Hermìone Sal. (daughter of Helena and Menelaus), 54 species; the Polyanthus-narcissus family, of which Holland abounds in species and varieties. 15. Hélena Haw. (the beautiful mother of Hermione), 6 species; of which *N.* tenùior, *Bot. Mag.*, is one. Lastly, 16. *N*arcíssus *Lin.* itself, now restricted to *N.* poéticus *Lin.*, and to the other species of that form, of which Mr. Haworth has enumerated twelve.

The four genera marked *Sal.* were suggested by that most acute botanist, the late R. A. Salisbury, Esq.; but Mr. Haworth remarks (*Narciss. Revis.* p. 110.) that he gave only the names, without one word more, either descriptive or otherwise.

In devising names for his new genera, Mr. Haworth has been won by the classical prototype, Narcissus, to the perpetuation of whose sad story the poets had consecrated this group of plants, to conform so far to the same "cast of thought" as to derive his new names from the pages of the classics also. In doing this he has had two objects in view; one, to exhibit, by the consanguinity of the persons whose names are applied to the genera, the close affinity of the genera themselves; the other, to supply the memory with botanic types of classical associations: and Mr. Haworth so esteems this latter object as to regret the want of conformity to it, which arose from oversight, in his (very expressively named) genus Chloráster, and to hope it will never be lost sight of by those who may hereafter have occasion to create additional genera out of this group.

Speaking of the species and varieties described, he says: "I have carefully preserved specimens of almost the whole, and they will be hereafter my vouchers for the truth." Of the genera, he says: "The genera of this group of plants here, and heretofore proposed by me, are very natural; and, though many years have elapsed without their being adopted by others, so much the better it is for my future reputation, for adopted they must be; and then will be proved my having seen just so far before my competitors. On the other hand, half a century's experience constantly amongst the living plants, might be expected to have effected more. The characters I have given throughout are short, but they are the result of experience, and I know their validity."

Mr. Haworth, in the postscript, p. 16., presents his thanks to the parties who have rendered him facilities; out of these we name Messrs. Loddiges, Whitley and Co., Young, Allen and Co., Colville, Sweet, Tate, Knight, and Pamplin, as their names may prove useful to the collectors of these lovely vernal visitants, —

> "That come before the swallow dares, and take
> The winds of March with beauty." — *J. D.*

Anon: The Garden; or Familiar Instructions for the laying out, furnishing, and management of a Flower-Garden: with illustrative Engravings on Wood and Steel. London, 1831. Neatly bound in coloured cloth; square 16mo. 3*s*. 6*d*.

An elegant manual on floriculture, extremely rich in practical information. This, and the superior style in which the engravings are executed and the book got up, render it, though small, scarcely dear. We recommend it to ladies highly, both for themselves and their children.

The volume quoted completes *The Garden;* but forms one of a series, in course of publication, called *The Little Library*, which are to comprise familiar introductions to various branches of useful knowledge. — *J. D.*

Wakefield, Priscilla. An Introduction to Botany, in a series of Familiar Letters; with illustrative Engravings. The 10th Edition: to which is added an Appendix, containing a short Introduction to the Natural Arrangement of Plants. London, 1831. 8vo. 4*s*. bds.

This agreeable writer's introduction bears in the number of the edition now published a strong testimony of public approbation; and the work is indeed delightful. The authoress, although herself duly technical, does not alarm the learner by a dry enumeration of repulsive technicalities; but clothes these with such welcome associations of thought and tasteful (not mawkish) sentiment, as engage our attention through the feelings, and thus at the same time imperceptibly supply the memory with the knowledge of the technicalities required.

The same happy method of bewitching us into more application and scientific knowledge than we should perhaps ever have attained had this knowledge been presented to us abstractedly, this authoress has applied in her appendix; where 70 pages are given to the facilitating of the student in acquiring a knowledge of the natural system of arrangement, or, in fitter terms, the natural orders. We rejoice at sight of this, and hope to see the natural orders progressively become the professed basis of her "Introduction to Botany."—*J. D.*

Russell, Joseph, of Kenilworth, Warwickshire, formerly an extensive Farmer in the neighbourhood: A Treatise on Practical and Chemical Agriculture; compiled principally from the scientific Works of Sir Humphry Davy, and compared with the Experience derived from a long and extensive Practice, &c. Kenilworth, 1831. 8vo. Sold by the Author, and by Foden, Printer, Warwick.

The author informs us that, during a "long and very active life, passed wholly in agricultural and chemical pursuits," he has had many opportunities of making observations, and of collecting information on these subjects, which but few other persons have possessed. He lays the result before "his agricultural friends" with great modesty, though "justly proud" of the patronage with which he has been honoured. One of his chief objects, he says, is to show the intimate connection between agriculture and chemistry. On glancing over the work, we find it to consist chiefly of quotations from Sir Humphry Davy, interspersed with original remarks. The only one which appeared to us worth noticing is, Mr. Russell's opinion "that white clover ought to be considered as a bad weed on all lands not intended to be kept in permanent pasture." The farmer in the northern parts of the island will recollect that in this part of England the white clover ripens its seed and sheds it; and every countryman knows that, in pastures, neither cows nor sheep eat the flowers of white clover. Consequently where they are not eaten, and ripen their seed, that seed must, sooner or later (and it will preserve its vegetative properties for an unknown number of years) spring up among whatever may be cultivated. However good, therefore, the white clover may be, as a plant for permanent pasturage, Mr. Russell contends that it is a bad plant for temporary cultivation.

PART III.

MISCELLANEOUS INTELLIGENCE.

ART. I. *General Notices.*

WITTY's improved Furnace. (p. 225.) — The inventor has sent us the following extract from the specification of his patent, together with a section and description of his furnace.

Extract from the Specification. "It will be seen from this arrangement of my apparatus, that fresh coal is first carbonised, that is, the gas is separated from it and inflamed, leaving only coke, which, being slowly pushed forward, supplies the coke fire; and the combustion or burning of the coke produces heat enough to carbonise the coal, and air enough to inflame the gas: consequently, coal, instead of being burned in its usual crude state, is subjected to two distinct processes, viz. carbonisation, and then combustion; for by my contrivance I burn the gas and the coke together."

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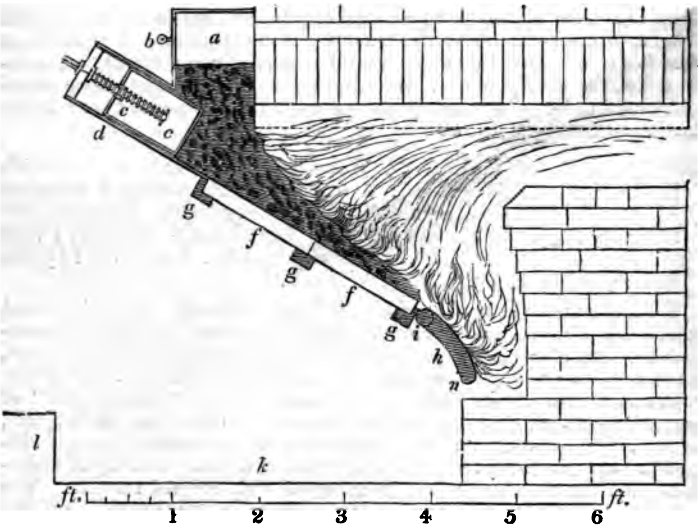

Description of the Section. *a*, The hopper, where slack is put in at the door *b*. *d*, An oblong square box the width of the furnace, fitted with a screw and cross bar, by which the pusher or presser, *c c*, is moved backwards and forwards at pleasure, in order to let the coals down from the hopper, or advance them forward down the inclined plane, *f f*, which is made of fine tile supported by crossbearing bars, *g g g*. *h*, The grate swinging on its centre, *i*, which may be placed at the most convenient angle, and supported by a chock brick placed in the opening at *n*, which opening serves to get out the ashes and clinkers when required. *k*, The ashpit. *l*, Steps down to the ashpit.

A letter signed by the Earl of Shrewsbury was sent with this communication, stating that these furnaces have answered perfectly in the garden at Alton Towers. — *Cond.*

Mallet's Patent Iron Wheelbarrows are remarkably light and strong articles, well deserving the attention of gardeners, new ground workmen of every description, and persons intending to emigrate. They take to pieces, and pack in very little bulk. They are manufactured in the neighbourhood of Dublin, and sold remarkably cheap, considering their great strength and durability (24*s.* delivered in London). When a poor-rate is obtained for Ireland, which, we trust, will be the case in a session or two at farthest, we hope hundreds of thousands of these barrows will be mounted for the public works that must then be set a going to employ the population. —*Cond.*

Dáphne índica [more properly *D.* odòra]. — Having succeeded in blowing this sweetest of all plants to perfection, and having witnessed its failure in many collections, I shall state to you my method of cultivation: — I take off cuttings from the top shoots, of which, when rooted in the autumn, I place two in a small pot. In the third year, and perhaps in the second, they will show bloom, when they should be moved into the vine houses, in order to ripen the wood, and bring forward the flowers, before their removal into the conservatory. By this method of treatment, I have never failed in procuring an abundant blossom; the flowers show themselves distinctly, and not clubbed together as otherwise they generally do.

Cýclamen [*pérsicum* ?]. — I have also been very successful in the cultivation of another beautiful plant, the *Cý*clamen, of which I have twelve large plants, unrivalled for size and abundance of flowers, amounting from one to two hundred on each plant. When they have ceased blowing, and the leaves begin to wither, I take the roots out of the pots, keeping them dry till September, when I put them out in the border; and when the leaves begin to appear, I repot them, and put them in a moderate hot-bed for a short time, and then place them in the conservatory. — *R. C. H. Stourhead, Feb.* 1831.

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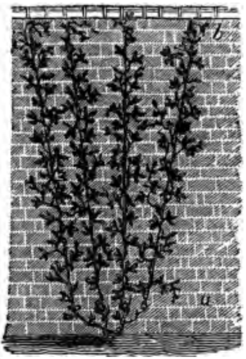

Training the Kennèdia rubicúnda. — My method of training Kennèd*ia* rubicúnda, formerly Glýcine, may be of use to some of your readers besides myself. It is simply this: nails are driven into the wall, near the ground (*fig.* 89. *a*), and at 3 or 4 ft. above it (*b*), close to which the plant is placed; strings are drawn from the the lower nails to those above, and the stems of the plant twined round them. I should imagine that this plan would be highly beneficial and advantageous with all half-hardy climbers, such as the passion-flowers, Cob*æ'a* scándens, &c., as the nails may be drawn, the stems or branches gathered together, and a strip of matting nailed over all for protection from frost.— *Mattheus Sylvaticus. London, June,* 1829.

Disándra prostràta died down to the ground last autumn, remained unprotected during the extreme cold of February, and is now in the most flourishing state of foliage, and with a promise of bloom. Both the Disándra and Kennèd*ia* are in London, where I find that, for five months of the year, common care and attention will keep in health and vigour most of the hardy and green-house plants I am acquainted with. — *Id.*

A Basket of Flowers. — In a late visit to the country, I was much struck with a bed of spring flowers. The framework of wire is covered with honeysuckle, the border is of violets, and the inside of lily of the valley. All were in perfect health and beauty, and the effect of the whole delightful.— *Id.*

Blètia hyacínthina. — This plant is growing in the open air in the botanic garden, after having withstood the winter without any protection except its situation, namely the base of an east wall. — *Henry Turner. Botanic Garden, Bury St. Edmund's, April* 1831.

Raising Vines from Spur-eyes. — Mr. Trory of Easton, by the advice of the gardener of R. Crawshay, Esq., of Honingham, Norfolk, planted spur-eyes about 1½ in. deep in the front of his inside border of well prepared light soil, — leaf mould, horse dung, &c. " This composition in a few days was in such a state of fermentation as to produce a sensible heat to the finger; the eyes soon appeared above ground, and, being so well supplied with sap from the spur and pieces of old wood attached to it, never stood still one day during the time the roots were forming, which is always the case with young vines rearing from the large eye of last year's wood. Not only does such an eye require ten times more food to nourish it than those planted by Mr. Trory, but the wood on which the eye is placed does not contain one tenth of the sap which the spur and the adjoining pieces of wood do.

" I must trouble you now further by explaining what I mean by a spur-eye: suppose a vine, on the single shoot system of one year's growth from the bottom to the top of the rafter, breaks every eye on the same and fruits, or not, I remove in the winter-pruning of the year every one of these shoots to the last bud that had a leaf at its side; this small remaining bit of wood I call a spur, which has two minute buds, sometimes quite invisible to the naked eye, one on each side; these buds have for years been called spawn eyes, supposing they were not fruiting ones. We old blue aprons used this slang word *spawn*, all over the garden, mostly to indicate a young stock of any thing not in a fruiting state. The spur I have described above I call a one year's spur, and as often as the season comes round, so do I call the vine, or a one, two, three, four, five, six, or more years' spur, never on any account allowing any one spur to get farther from the main stem than the first year, except what is added to the distance by the excrescence necessarily formed by the covering of old wounds and consequent thickening. It was from such aged spurs that Mr. Trory produced the beautiful vines at Easton; and I think there can be no greater proof of the excellence of the spur system of grape-growing, than that, though the spur be removed from the plant, it is still capable of making a shoot of 20 ft. or more of fine bearing wood; whereas any eye farther up last year's shoot would in the same time scarcely make a yard of any thing thicker than a crow's quill, and about as likely to bear fruit. I may be asked where such plants may be obtained? Any where; there is not a house in the country worked on the old Hampton Court or broad-cast system that does not produce plenty of fine sets every year, which are always thrown away, while the young large eyes on the last year's wood are improperly employed in the rearing of young vines." (*R. Crawshay, in East Anglian, March* 22. 1831.) This newspaper has set out on the principle of allotting a portion of every number to gardening and agricultural papers; a most rational plan, which every country paper would surely feel the benefit of adopting? What can be more interesting to country readers than farming and gardening? Unfortunately, the farmers of this country are not yet become a reading class. Much is said of Norfolk farmers and Norfolk farming: neither are worthy of being named in the same day with the farmers and farming of East Lothian. — *Cond.*

On stopping Vines from bleeding. — Let the part bleeding be forced into a sound potato; for if any of the skin of the potato has been rubbed off, the sap of the vine will soon find its way to escape, and the vine will continue to bleed; but if the potato be free from any bruise, it stops the vine from bleeding. I have been much amused in proving this by experiments. By chance I observed one of my vines bleeding very much; a potato was lying on the floor, into which I had struck two cuttings of apple tree intended for grafts; I took the cuttings out of the potato, and forced the bleeding end of a vine branch into one of the holes, and, to my great surprise, I soon saw a drop appear at the other hole. I then removed this potato, and got a perfectly sound potato, and forced the end of the vine branch into it; this I found to stop the bleeding. I then cut a luxuriant vine, to try it fairly, and found it again quite effectual. I then cut the skin of the potato in five different places, and found that the sap of the vine made its way out at those five places. I am, Sir, &c. — *M. Saul. Pomological Garden, Lancaster, April* 11. 1831.

Experiment with the Mulberry. — Sir, I beg to forward to you the following experiment which I have made this year on the mulberry tree. Being a few months ago in Paris and the neighbourhood, I was much pleased with the fruit of the mulberry, as well as the appearance of the tree; and, being informed that it was easily propagated by cuttings, I was induced, in March last, to obtain from a gentleman here a few cuttings, about 18 in. long, of last year's wood, which I plunged in good soil, half the length of the cuttings. I have kept them damp and shaded; and I have the pleasure of informing you that some of them are now nearly out in leaf, and most of the remainder coming out. I hope to find them useful, not only on account of the leaf (as I keep and propagate the silkworm), but also for fruit, as I am informed they will fruit next season. I trust this circumstance will induce many of your intelligent and scientific correspondents to try the same experiments; for I can with confidence assure them that they will find but little difficulty in succeeding, if they plunge the cuttings sufficiently deep, and keep them damp. I have often regretted that the mulberry tree is not more cultivated in this country than it is, feeling convinced that the crude notion of our sires "that the climate will not suit it," will evaporate and vanish before the hand of the cultivator. — *G. G. Birmingham, June* 23. 1830.

The Scarlet Runner (*Phaseolus multiflòrus*), *a Perennial Plant.* — Sir, Plants of this esculent, in the second year of their growth, were exhibited, May 25., at the Show of the Norwich Horticultural Society, when a bronze medal was awarded to the exhibiter, Mr. Lindley. In the *Norfolk Chronicle* of May 28. the above Show, which was very splendid, is most ably reported, and the following information supplied on the scarlet runner: — "Its roots are tuberous, like those of the Dáhl*ia* (Georg*ìna*), and may be preserved through the winter in the same manner. The method of cultivating this vegetable as a perennial is first brought into notice in a work which Mr. Lindley has now in the press, and which in a few weeks will make its appearance under the title of *A Guide to the Fruit and Kitchen Garden.*" *The Bury and Norwich Post* of June 15. supplies still farther information, as follows: — "The plants exhibited were raised from seeds sown in April, 1830. They were taken up in November, and preserved in some dry mould in the cellar through the winter, and planted out again the 7th of April last. The roots were then perfectly sound, as well as the stems; from both of which, at the time of their exhibition, they had pushed vigorous young shoots, of from 6 to 9 in. in length. They are now growing luxuriantly round their stakes, and will soon produce a second year's crop. It is not a little remarkable, that this useful and valuable inhabitant of our gardens for at least two centuries, should not have been discovered to be perennial by any of our English writers on horticulture. The first crop of scarlet runners, from year-old roots, of which we have any knowledge, was grown under the superintendence of the exhibitor in 1827."

All this is interesting; but, although "English writers on horticulture" may not have previously discovered the perennial duration of this plant, English gardeners have. I have known the fact a dozen years; Mr. Dennis, nurseryman, Chelsea, has known it thirty years; and, in Sweet's *Hórtus Británnicus*, ed. 2. p. 157., both the scarlet runner and its white-flowered variety are marked perennial. The tuberous rootstock of the plant, which taught me the fact, had been accidentally shielded from the winter's frost; and the solidity and plumpness it exhibited prompted my brother to plant it. This he did on the edge of a gentle hotbed, where it grew, and formed by summer's close a beauteous wreath of green and scarlet, 4 or 5 ft. long. The plants, in the instance known to Mr. Dennis, grew in a cottage garden, near the cottage, where they had been unintentionally protected through the previous winter by a stack of fire-wood placed over their rootstocks; part of this stack remaining unconsumed until the summer, the growing stems of the scarlet runners struggled up to light and air through the interstices in the firewood, and thus made manifest their perennial nature, both to himself and to the cottager who subsequently made practical application of the knowledge nature had imparted.

Mr. Lindley having now, however, published this fact, it remains for all concerned to use it. In seasons when seeds of the scarlet runner are but sparingly or not at all ripened, its perennial rootstalks may prove an available resource for a next year's crop; should it not be found that the seasons insufficient to ripen perfect seeds are also insufficient duly to develope and mature the tuberous rootstocks of that season's formation, to enable them to outlive the lingering winter. In seasons in which ripe seeds are plentifully produced, the greater trouble attendant on preserving the rootstocks through the winter may cause them to be neglected.

The dwarf kidneybean (*Phasèolus vulgàris*), in germinating, constantly brings its cotyledons above ground, while the scarlet runner (*P.* multiflòrus) as constantly leaves them below. Have all perennial *Phasèoli* hypogæous (under-ground) cotyledons, and all annual species epigæous (above-ground) ones? If they have, two useful and natural sections of the genus are therein supplied to botanists.

Plants of the above two species were visible on the 10th of June last, from seeds sown on May 31. The dwarf kind appeared above ground first. I am, Sir, yours, &c. — *John Denson. Bayswater, June* 12. 1831.

To destroy Woodlice. — Sir, To free my crops from the destructive inroads of these numerous and provoking depredators, which frequently destroy whole crops of mushrooms and melons, I have successfully practised the following method: — I slice the tuberous rootstock of *Bryònia* dioíca, a plant which grows in old hedges, into pans or feeders, such as are generally used under strawberry pots, a few slices in each pan, and cover them lightly with moss, as the woodlice prefer feeding under cover. In the evening I place the prepared pans in different parts of the beds, frames, or other places in which the insects are troublesome, and the next morning remove the moss and slices, and cast the woodlice into a pail half-filled with boiling water. This, of course, ends them; and four or five repetitions of this process leave very few woodlice behind. I am, Sir, &c. — *Alpha the Second. May* 13. 1831.

The *Bryònia* is not represented as destroying, but as only decoying, the woodlice; and as these usually manifest a pretty general appetite, will not slices of apple, pear, potato, or something else always at hand, decoy them as effectually as slices of bryony? The newt feeds on woodlice, and it would, therefore, be as judicious to encourage this animal in frames for consuming woodlice, as the toad for consuming ants. Another mode of destroying woodlice is described at p. 280. The very common large beetle (a species of *Cárabus*), and the cockroach (*Blátta* orientàlis), seem to attack mushrooms while in the button state. These two insects are bad company; for the *Cárabus* kills and consumes the *Blátta*. — *J. D. for Cond.*

ART. II. *Foreign Notices.*

FRANCE.

REMARKS on Touraine. — Sir, Touraine has of old been called "the garden of France," and its present inhabitants are by no means willing that it should lose this complimentary epithet. In good truth, it has some pretensions to that name, though a stranger, particularly if he be an Englishman, might not be disposed at first sight to concede the title. Every where on the slopes and steep sides of their very moderate hills (the *côtes*, as the French call them), the vines are cultivated; the châteaux of the country gentlemen, and the country houses of the bankers and merchants of Tours, are surrounded by them; in short, except in the rich alluvion which forms the nearly unrivalled rich soil of the valley of the Loire and Cher about Tours, vineyards prevail every where. There are many thousand acres of vineyard, perhaps not less than 80,000 or 90,000, in the department of the Indre and Loire, which comprises the whole of the ancient Touraine, together with small parts of what were formerly the provinces of Poitu and Anjou. In consequence, the garden-like appearance of the country is wofully injured for five or six months of the year, being the interval between the beginning of the vintage and the foliation of the vines late in the spring. During the whole of this long period, nine tenths of the country looks like fallow fields, particularly if the vineyards receive their due share of cultivation: and there is little to relieve this sombre monotonous appearance, except here and there a small grove of tall taper trees, planted with exceeding regularity, to shelter the houses in the country from the westerly winds of winter, or to shade them from the scorching heats of summer. Early in the spring, however, the almond, the apricot, and the peach tree, the cherry, and the plum, beautifully chequer the scene with their blushing and delicate blossoms. They are planted freely in the vineyards, as well as in the gardens; are generally standard trees; and most years yield their respective fruits in great abundance and excellence. But the background, the carpet of green, is wanting; and, if I may judge by my own feelings, it would take many a long year to reconcile an Englishman to the absence of that delightful verdure which renders our own isle so lovely.

But if from the country at large, too partially called a garden, we step into the more confined divisions of land distinguished by that name in most countries, there indeed do the richness of the soil and superiority of the climate show themselves to surprising advantage. In the market-gardens not only do nearly all of the hardy and spring vegetables which we cultivate find a place, but the cardoon and many other plants, chiefly for their soups and salads, of which we know little and cultivate less, are intermixed in almost endless variety. Excellent and cheap, surprisingly so, are the vegetable productions of these gardens; and, in general, they are taken to market at least a month earlier than the same articles are in the most favoured parts of England. On the 1st of April asparagus were served up at table; they had been in the market a week before: they were sold on that day for a franc (10*d.*) the botte, containing from 75 to 80 well grown asparagus; and by the 16th two larger bottes, of from 90 to 100 stalks each, were to be had for one franc four sous, equal to a shilling of our money. Vast quantities of this excellent vegetable were by this time not only exposed for sale on the market-days, but hawked about the streets daily. The cultivation of the asparagus plant in the neighbourhood of Tours, if cultivation it can be called, is curious, as affording a striking proof of the peculiar excellence of the soil, the general mildness of its winters, and the early warmth of its springs. After the seeds are once sown, no other care is bestowed upon the beds but to keep them free from weeds. Every stalk cut throws up several, and continues to do so for many years, without renewal of the plants or change of the beds; and in the winter they are scarcely ever covered with manure, as in England, either to protect them from the effects of frost, or to hasten their ripening early in the spring. Green peas were plentiful in the market by the end of April, and I was assured by English persons who had resided many years in Tours, that peas were late this year. In the fruit and flower gardens, the peach and nectarine trees, against a wall, were in full blossom on the 17th of March; rose trees, even the Bánks*iæ*, in leaf; raspberries, trained to a trellis, coming out; and the filbert hedges generally in leaf. France does not abound in shrubberies, or with gardens in the English style; yet are there many imitations. In Tours, the garden of the Minimes, a conventual house, now become private property, is laid out with taste, and abounds with early-flowering shrubs; among which, when the height of the bloom of the almond tree was past, the laburnum, the Judas tree, and the cornelian cherry shone conspicuous in the midst of a profusion of roses in beds and in the front of the borders. In the garden of the Minimes there is also a considerable portion of lawn; but, though mown, it is never rolled, and looked more like a field than what it was called; but it *was* green.

The gardens of the peasantry and smaller proprietors are small, but the latter grow many vegetables in their open plots of land, which, in England, are grown in our best cottage gardens. The house, however small, has invariably a vine or apricot tree trained against it, frequently both, and the woodbine and the rose cluster round the door and windows. Having paid some attention to the arguments of political economists on the subject, and anxiously endeavoured to arrive at a true conclusion, both theoretically and practically, as to the consequences of minute division of landed property in the hands of small proprietors, I lost no opportunity of ascertaining on the spot, from personal observation and enquiry, what are the practical effects of the laws of inheritance in France. This is not the place, nor have I time to spare at present, for entering into the discussion of a political question, of all others perhaps the most important under existing circumstances: yet, as intimately connected with the subject of the improvement of the condition of the industrious classes, which you, I think, have very laudably and judiciously introduced into your instructive and interesting pages, and which, you know, has for many years occupied a large share of my attention and solicitude, I cannot refrain from adding that the result of all I could see, hear, or in any way learn, has established a firm conviction on my mind, that, on the whole, the division of landed property (minute and extreme as in many cases it may be), which the present laws of inheritance in France are charged with having a tendency to promote, is calculated to insure, in an eminent degree, the happiness of the great body of the people, and the peace, security, and permanence of good governments *; and that, so far from having produced the pauperising effects predicted by Arthur Young in his *Travels in France*, the multiplication of small proprietors, since the date of his visit, has, on the contrary, extended the means of comfortable subsistence, respectability, and happiness to additional numbers of human beings, without a symptom of poverty becoming apparent. The immense estates which the church had obtained possession of, have, since the time of Mr. Young's writing, full forty years ago, been resumed by the state, and sold as national property, on terms so easy, both as to price and the periods of payment, that multitudes of industrious peasants have become proprietors of lands in detail, which were heretofore monopolised, on a large scale, by lazy monks and wily priests, the drones and pests of society. In Touraine this minute division of landed property is said to be carried to a greater extreme than in any other part of France, and yet there is there no poverty, no wretchedness, either real or apparent; except, indeed, in the city of Tours, where decayed manufactures have, as is usual in such cases in England, left a needy and half-employed labouring population. Tours has never yet recovered from the deplorable effects of the revocation of the edict of Nantes, and the severe persecutions and measures which deprived this city of the finest silk trade in Europe, and reduced the number of workmen employed in that branch of manufacture only, from forty thousand to four! It is, however, with the state of the country, not of the towns, that this great question has to do; and with actual results, not with prejudiced or hasty speculations: and I must limit what I have here farther to state on this subject, by saying that forty years of experience have not only completely falsified the opinions and predictions of Arthur Young on this interesting point, but that the comparison which he boldly challenges between the landed systems of England and France, if revived at the present day, would show that whilst, as it relates to the small landed proprietors and peasantry of the latter country, there is no pauperism requiring relief, in the former every seventh person you meet with is in some way and proportion maintained at the expense of others. It is, however, but justice to Mr. Young to add that, since he wrote, the galling exercise of feudal occupations has been abolished in France, and the curse of tithes for ever removed from that country.

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* I say, *on the whole*, the good appears to me greatly to preponderate. That this good is not without its drawbacks, I am as willing as any one to acknowledge; but I am also sanguine enough to believe that, if the exertions of the friends of liberal education in France (at the head of whom must be ranked the enlightened and benevolent Comte de Lasteyrie, a near connection of the illustrious La Fayette) succeed according to their deserts, by far the strongest objection to the present laws of inheritance in that country will be gradually obviated. If I should find time, on my return to England, to select and arrange the notes from my commonplace-book on this and other interesting subjects, particularly that of education in France, I might lay them before the public in some more distinct, enlarged, and tangible shape: but this is not likely to be the case at present.

The vegetable market in Tours, although spacious, has no accommodation for either the sellers or the articles exposed to sale. There is a small fountain at the upper end; but the supply of water in the summer is very inadequate to the purposes of cleanliness and health. The fruit market has a separate space for its use; and, as common in France, there is a distinct market for flowers, which, raised early in the spring, are very abundant, varied, and beautiful. — *John H. Moggridge. Tours, May* 10. 1831.

RUSSIA.

Botany. — The botanist attached to a recent scientific expedition from Russia to the Brazils has brought from Rio Janeiro, for the botanic garden at St. Petersburgh, a collection of above 1000 living Brazilian plants, as beautiful as rare, and among which are many never hitherto seen in Europe. This rich acquisition, joined to the young plants which the garden has already obtained from Brazilian seeds, will soon be sufficient to fill a large green-house, where the lovers of botany in the 68th degree of N. latitude may form an idea of the beauty and variety of the flora of a vast country situated between the tropics. (*Literary Gazette*, Jan. 29. 1831.)

DENMARK.

Floricultural Society.—Dear Sir, A Society for the Improvement of Floriculture has lately been formed in Copenhagen, and I have had the honour of being elected a member of it. The Society is yet in its infancy, therefore much cannot at present be said about it. It is, however, highly gratifying to find a taste for our science among persons of consequence; and there is no doubt that, as this Society succeeds, the taste will extend arther.

The autumn here has been fine, and the harvest pretty tolerable; corn prices are high; fruit is scarce, and not highly flavoured; forced asparagus is this day selling at ten English shillings the hundred. I am, Sir, &c. — *Jens Peter Petersen. Royal Gardens, Rosenborg, Copenhagen, Dec.* 23. 1830.

NORTH AMERICA.

Culture of Gerardias, and Hints on American Plants. — Do you not make too great a mystery of the cultivation of American plants? I apprehend you destroy more by kindness than by neglect. When removed from their native woods to our gardens, we do not find them difficult to cultivate. In the *Encyclopædia of Plants*, and Gardener's Magazine, you say that our Gerardias, which are the most beautiful of herbaceous plants, are so impatient of cultivation that few individuals have seen them in gardens. Here they are weeds in our fields. Seventy Gerardias are found to one *A*sclèpias or *P*hlòx. Sow the seed in a dry poor soil, not too much shaded, and your gardeners will have no difficulty with Gerardias. They are mostly met with on hills, where the timber has been thinned out; but sometimes on the low grounds. In a square yard of damp soil I have found Lobèl*ia* cardinàlis, syphilítica, and inflàta, and Gerárd*ia* *q*uercifòlia and purpùrea. Our azaleas and rhododendrons are found in all parts of the country, growing equally well in great varieties of soil. — *J. L. York, Pennsylvania, Nov.* 27. 1830.

New Species of Elm Tree. — Mr. David Thomas describes, in *Silliman's American Journal* for 1830, a new species of elm, under the name of *U*'lmus racemòsa. Its specific characters are, flowers in racemes; pedicles in distinct fascicles, united at their bases. It is a tree, and its lower branches have irregular corky excrescences. It is a native of the Cayuga country, in the state of New York, and of the adjacent country. (*Literary Gazette*, Jan. 29. 1831.)

AFRICA.

Relative Merits of the Cape of Good Hope, America, and Australia, as Places for Emigration. — Sir, You request me to give you a candid opinion of the relative goodness of the Cape of Good Hope, America, and Australia, as places adapted to emigration. I shall endeavour to do so only by a few loose observations, which you must digest at your leisure; for the subject is one which I consider extremely difficult to treat on to my own satisfaction, and most assuredly liable to displease many who may emigrate from their native lands (they know not for what), and who are likely ever after to regret their having done so.

I can only judge of the comparative merits of North America and Australia from what little I have read, or heard from friends who were equal to the task, and worthy of credit; but I must say, that, even from the most favourable and partial accounts, I should not hesitate to recommend, or to choose for myself, the Cape of Good Hope, which, notwithstanding all that has been said against it, I consider (from fourteen years' knowledge, and, of these, five years' actual investigation of at least three parts of the colony) superior both in natural resources and climate, and capable of being made more conducive to domestic comfort, than either of the other mentioned countries.

That there exist certain drawbacks to an unalloyed happiness in South Africa cannot be denied; but where is the country in which the restless ambition of man, and his insatiate wishes, do not meet with disappointment? This is no country to come to for the purpose of gaining a rapid fortune, although many have succeeded even in this; but it is a country where the sober, honest, and industrious may acquire a comfortable livelihood, and even attain a respectable independence, at the same time enjoying luxuries which do not often fall to the lot of the working classes in Europe.

Placed at the southern extremity of Africa, and centrally situated with regard to India, South America, and Europe, the Cape enjoys great scope for commercial enterprises, which must ever be the firmest support of this thriving colony; and, were the ports made free, it would become a depôt and general mart for the productions of both hemispheres. It is true that, in all the extent of coast which we possess, there exist but few perfectly safe harbours: but in this respect I do not consider the Cape worse off than other countries; and I believe its bays and roadsteads have obtained a worse character than they really deserve. It is certain, that in various gales which have destroyed or driven on shore many vessels in the various bays of the colony, there always have been vessels exposed to the same chances of destruction which have "weathered the storm;" and although the navigation round the Cape is dangerous to the inexperienced, from the force of currents, the severe gales prevailing at certain seasons of the year in the Indian Ocean, and the total absence of lights on the coast, I have been informed by experienced seamen that they do not consider the hazard so great as that which exists in the northern seas. This being the opinion of some of our most experienced coasters, who were bred up in the roughest of the European navigations, may be relied on: as to myself, I would rather undertake the voyage to Europe, at certain seasons, than the coasting here.

The first hardy navigators who weathered the Cape named it the "Cape of Storms:" their prince, however, with better feeling, gave it the name it now bears; and, with all its faults, it still offers the cheering hopes of growing prosperity. The Dutch proprietors foresaw their inability to keep possession of this colony; and, from a mistaken policy, surrounded the coast with ideal dangers, and exaggerated those which exist: and the narrow-minded policy of the Dutch East India Company retarded internal improvements, except in extending their line of territory, and encouraging some few remarkable and interesting journeys to the northward, while they at the same time placed many obstacles in the way of a generous, friendly, and commercial intercourse with the strange and divided natives on the frontier; a policy which, until lately, has been followed up by several of the British governors. On the advance of the European stock, the comparatively mild tribes of Hottentots were easily subdued, or retired before the intruders; but many of the cruelties stated to have been exercised by the Dutch have been greatly exaggerated. Those dreadful distempers, the small-pox and measles, depopulated many of the fertile districts, and certainly had no small share in reducing the aborigines to a condition bordering on slavery.

The climate of the Cape of Good Hope, although affected by sudden and remarkable changes, I consider one of the most salubrious on the face of the earth; and those who have it in their power to choose their residence may, even in the neighbourhood of Cape Town, select such spots as are not rendered intolerable by solar heat, or exposed to the healthy but disagreeable gusts of the south-east wind. The soil, as may be expected in a country of primitive mountains, is various, but, generally speaking, may be termed sandy loam, with iron pyrites, &c., and fragments of rock, generally of schist or sandstone, requiring both water and manure; but, even where rocks or sand prevail on the surface, the country cannot truly be called barren, as it produces many hardy shrubs, and forms extensive grazing ranges for both tame and wild animals. The more fertile spots are dispersed between and along ranges of mountains of the most romantic forms; immense plains of a stiffer soil, to the north, rear thousands of cattle and sheep, by natural produce alone; and, perhaps, this stock is of the best description for South Africa. Those cattle ranges are, however, subject to periodical droughts; and, the rivers having their sources at great elevations, the rains which fall are speedily discharged down the rocky beds of these streams, and the country is, consequently, but little benefited by them: indeed, the rivers themselves, in most cases, may be considered periodical, and extremely limited in value; therefore, of all real drawbacks to the prosperity of the interior, the scarcity of water is none of the least. Still, however, when population shall become more dense, water will be found and brought from the bowels of the earth, in greater quantities than many persons anticipate at present. This has been already done in the neighbourhood of Cape Town; and encourages the industry of man, by showing the power he may exert in creating an earthly paradise on what has hitherto been deemed barren waste.

Another great obstacle to agricultural prosperity in this colony is the dearth of manual labour; not so much from a want in number of what ought to be labouring hands, as from the general habits of those persons who ought to form an industrious body, I mean the aboriginal and coloured inhabitants; and a prevailing indolence, not natural but acquired, in the white part of the inhabitants, who, I believe, where a coloured race and slavery unfortunately exist, from a mistaken and ignorant pride, consider themselves above manual occupations. As population increases, this evil diminishes, and will eventually disappear. But, while speaking of the indolence of the white inhabitants, you must not suppose that I mean the whole. Such an assertion would be unjust: many of the farmers of the interior gain but a scanty subsistence by the sweat of their brow, and exhibit a spirit of active industry creditable to themselves, or to any persons inhabiting such a wild and arid country; and evince much latent industry, which it requires only a steady and remunerating market to encourage and improve.

Regarding slavery here, it exists in its mildest form; and, were it not for the difficulty attending the emancipation of slaves by their own individual industry, it might be considered to exist only in name, or, at least, would do so in a few years. It appears to have been necessary in a new colony to assist in bringing the land into cultivation, and thriving luxury called for more servants in the town; but it is much to be regretted that a slave was ever known in this colony, which requires a free and persevering exertion of labour, and honest, and industrious, and sober habits. These qualifications rarely meet in the slave, who, having no personal interest beyond the avoiding of punishment, cares but little for rewards: he knows he must be clothed and fed; and, while viewing the wandering Hottentots, says to himself, " Slavery is but a name," and exultingly compares their meagre and naked persons with his own sleek, well-fed, and comfortably clothed carcass.

The Hottentots, have, in a great measure, become a pest to the humane, and appear to lose much of their better character at the London missionary stations. Those of the Moravian missions, on the contrary, exhibit marks of superior and industrious habits, and of sincere conversion to an unassuming Christianity, especially among those born and brought up at the Moravian stations, where moral conduct, industrious habits, and a sincere confession, as far as man is enabled to judge, alone assures them an asylum, an introduction to rank among men, and enjoyment of a Christian education. This is a subject I have hitherto abstained from entering into. I earnestly wish missionary labours every laudable success: but I see much to condemn in a system strictly jesuitical in many points, and which too frequently breaks forth in fanatical persecution; to call it an emulous enthusiasm is too gentle a term. This matter has lately been brought before the Cape public in a newspaper, the *Zuid Afrikaan*, wherein the language made use of is not to be admired, and might have been avoided; but the exposures now making, it is hoped, will have their due effect, and insure to a well meaning body at home a more correct conduct in their ministers abroad. The mischiefs these teachers have already occasioned are, perhaps, past reparation, their tales having obtained for the Hottentots what it was presumed by the well meaning but misled government at home would benefit those tribes, namely a repeal of the restrictions which prevented them from strolling about like gipsies through the country, unless they had written passes from the missionaries, or their employers. This act of grace, as it is termed by some, will, in my humble opinion, tend more towards the extirpation of the race, by a contrary effect to that intended, and in direct opposition to the wholesome restrictions which formerly governed them, than any alleged acts of oppression under the old system could have done.

The low price of wines and spirits, the latter being the favourite beverage of the Hottentots, and the facility they have of procuring a few pence by occasional industry, or by plunder, allows them to indulge in drunkenness and other vices. The Hottentots were acquainted with intoxicating drinks before their connection with Europeans; and, even yet, will make use of them when ardent spirits are beyond their reach.

The Hottentots, when they are good, are a mild and affectionate race, and make faithful servants. They are not naturally of that dull and phlegmatic character which many suppose, but enjoy a liveliness and mental capacity which occasionally shows itself in the exercise of sarcastic wit, at the expense of each other, or at the cost of their employers, whose personalities and peculiarities do not escape their humorous and expert mimicry. Possessed of an easy and tractable temper, the Hottentot is not difficult to manage; he requires a particular but not a severe method, accompanied by moderate and certain rewards: it is owing solely to pliability of temper, and not to innate villany, that the Hottentot too often becomes a hypocrite.

Another obstacle to immediate improvement in the agriculture of the Cape, and a most serious one, which ought alone to refute the indiscriminate accusation of indolence imputed to the inhabitant peasantry, consists in the expense and difficulty of transporting produce in large quantities and from distant parts, owing to the badness of the roads: but, unless some of the farmers undertake long and wearisome journeys, they cannot dispose of their produce, nor procure at reasonable rates the few luxuries of European clothing, and the necessary implements required in farming operations. Under these difficulties, were it not for dire necessity, many of the farmers would decline raising more grain on their farms than would be sufficient for themselves and families. Under the judicious and prompt management of our present worthy governor, the state of the roads is improving, as far as the limited means at his command afford; and it is to be hoped that these necessary works will meet with every assistance from home.

The prices which grain has lately brought have given a stimulus to farther industry; the opening of the ports to the export of corn has caused a greater breadth to be sown, and I shall be greatly mistaken if the colony will ever suffer again from famine, as it did a few years ago. Here I must remark, that the greatest noise was made by the body of the settlers, most of whom, at their first landing, regretted the flesh-pots and accompaniments which they had left behind, and hundreds of them would have returned to distressed England had they possessed the means. Their complaints were loud: although supplied with good rations, something was still wanting. Not so with the patient and hardy peasantry: they, as they always have done in similar cases, put up with a flesh diet, were thankful and silent.

I need not enquire the motives which induce so many persons to emigrate. Discontent appears to have a great share in those movements. Numbers who have arrived within the last seven years at the Cape confess that they were not badly off when they left England, but expected to do better here. Of these, many are totally unacquainted with rural affairs, and belong to professions which are comparatively useless in this colony. It is distressing to witness the difficulties which many of those persons must encounter by entering into new occupations; and where cultivation of the soil must necessarily form a great part of every one's pursuit, there arises a difficulty of disposing of their superabundant produce.

There are two descriptions of persons wanted here; viz. men of independent property, not averse to a retired life, or such as do not pine after the more refined amusements of Europe, and who may wish to provide landed inheritance for their children, by purchase, which is the most reasonable (grants are out of the question, and where possible are by no means profitable or comfortable, and are mostly engendered and blazoned in the brains and pages of your pamphleteers); and the honest, sober, and industrious labourer. We neither want the gentleman farmer, nor the artisan who wishes to raise himself to instantaneous wealth by some magical power he is incapable of wielding. The gentleman farmer who would expect to live on the produce of his estate, would (as several have done) continue the same extravagant style of living which fictitious prosperity forced upon him at home; and, from inexperience and mistaken pride, he would here require his steward, farmer, and a long *et cętera* of attendants, which high prices and country bankers allowed him for a short period in England; but all of which must be disbursed from very moderate returns. All these circumstances must be duly considered, and particularly so, as the prosperity of the colony depends upon its ability to furnish produce at a very low rate, which, in many instances, does not reimburse the grower for his outlay. A great portion of the corn is purchased by the merchants on speculation, and, in Cape Town, store hire is very expensive. The merchant must watch a favourable opportunity to export; and, as this period may be protracted, he cannot be expected to afford a high price for wheat.

We are stunned here, by a constant outcry of the distresses of many classes in England, and the consequent necessity of emigration. The whole of the emigrants who have lately arrived here to settle, or who have passed on to Australia, speak, however, in a tone rather high and unguarded for distressed persons. Those possessed of a little property expect as much attendance as Indian nabobs; others with brazen impudence, the fruits of sheer ignorance, look upon the Cape of Good Hope as a land of savages. The servants and labourers, too often forgetting their proper station, rather wish to spend their time in the sports of the field, than to follow their lawful occupations with laudable industry; and it is not unfrequent to see them, at their first landing, strolling about with fire-arms, expecting to meet with wild beasts at every corner. These ridiculous notions they have imbibed from reading the accounts of old times, or from the petty compilations of persons who have visited Cape Town, or who may have rode a few miles into the interior, and, having amused or disgusted such of the inhabitants as understood them by their futile remarks and childish questions, have been led in many instances to publish as facts, the ludicrous jokes and well deserved sneers which have been passed on themselves; or have repeated, with mischievous colouring, the diabolical assertions of others who have preceded them. It is difficult to say whether such beings are more deserving of contempt or pity; it must, however, be regretted that their conduct tends much to mislead the unwary.

We now hear but few very serious complaints from our settlers on the frontier, who, from various causes, were constrained to remain on their locations, and now, by persevering industry, appear to improve their circumstances, having overcome their greater difficulty of settling a new country, and obtained some knowledge of the soil and climate, an essential which practice alone can bestow. The depredations of colonial Hottentots, and other free persons of colour must be regretted, but, under existing laws, cannot be controlled effectually: this circumstance gives rise to much discussion and angry feelings, at all times to be deplored.

In Graham's Town and Graaf Reinet, horticultural and agricultural societies have been established, and, from the nature of the communications I have received from them, I anticipate much improvement to the circumstances of the colony. At Uitenhage a similar institution is formed.

From the enterprising spirit of research and speculation which has actuated several private individuals of the Albany district who have penetrated far into the interior, a new and great field is opened for commerce and farther discoveries, and also for the work of civilisation by missionaries, whose labours are far more valuable in those countries than they can be within the boundaries of the colony. The persevering labours of Mr. Moffat at Littakum reflect the highest credit upon himself, and will greatly atone for the backslidings of others professing the same intent.

I understand that an account of some of the abovementioned journeys will shortly be published; but it is much to be regretted that several of those praiseworthy travellers have fallen victims to their exertions, or, to the disgrace of the British government, have accomplished their views without its assistance, although such enterprise must, and does eventually, tend to the aggrandisement and emolument of the empire at large.

No British colony feels the severity of the East India Company's monopoly more than the Cape of Good Hope; and, although much difficulty and ensuing ruin would be the lot of many speculating individuals should the China trade be thrown open, yet it is a measure which the Cape merchants and others look forward to with the most flattering hopes. The policy which the East India Company has exercised towards this colony has been erroneous; for in the endeavour to depress the energies of the Cape merchants, and to depreciate the value of the colony in the eyes of the legislature, they have provoked an opposition to the Company's monopoly, and called into action no small share of talent hitherto dormant. The prohibition of the Company's ships from refreshing at the Cape can only serve to enrich a few individuals at St. Helena, and at most serve the directors as a cloak for the thriftless pensions created by that island or its services. One would suppose that the Cape might at least furnish wheat or flour sufficient for that spot; but it appears that English flour alone agrees with the palates of its inhabitants.

From the above unconnected notes I think you may gather sufficient argument to recommend the Cape to respectable emigrants, in preference to America or Australia. Here they would find more comfort in general than in the mixed and disagreeable society of those countries. I would recommend the perusal of Widdowson's *Van Diemen's Land* to every one who chooses to emigrate; what he says respecting domestic servants is applicable to all colonies. With regard to outfit, British manufactures are cheaper here than an emigrant can bring a small investment out for. Children from twelve to fourteen years of age would make the best servants; and I have an idea that they would, under good management, form in a few years a respectable class of working society, and in time serve to exterminate slavery, and create a lasting benefit to the colony, by bringing the Malay and coloured population to their proper feeling. At present their insolence is provoking, and borders on rebellion, especially among the slaves; forming the source of much inconvenience.

I have had much conversation with several persons who have been to Swan River, some of whom are settling here, and appear to be so far satisfied: others, who could compass it, have returned to England. Their accounts of the new settlement vary, but all agree in the want of slaves or convicts to perform their drudgery. It is somewhat strange that those persons so lately from England should desire such servants; the wish can only arise from inexperience; and may be excused from observing the treatment of the slaves and convicts in Cape Town. I hate the services of either, but here at present it is a necessary evil.

As you are anxious to collect general information on any thing connected with emigration, allow me to recommend to your perusal the *Times* newspaper of the 6th of January, 1821, where you will find a paper of my worthy and much esteemed friend G. von Langsdorf. What that gentleman writes you may depend upon for accuracy and true philanthropic feeling.

It is perhaps necessary to observe more explicitly, that the government here has no large and valuable tracts of land to give away near to the immediate markets, and, if they had, I do not see what just claim the bulk of emigrants from Great Britain has to such gifts, or whether it is advisable to grant to artisans that which is of little use to them. As an established colony, the Cape is able to support a much larger population than it contains at present; as a proof of which, I need only remind you of the circumstance of six thousand persons finding an asylum here, few of whom were independent: they certainly met with difficulties at first, which, however, generally speaking, proved temporary. If it is only to gain a grant of land the emigrant quits Great Britain, I should advise him to go to Australia, or elsewhere. I do not wish to see the effects of the rural abilities of many who, calling themselves farmers or gardeners, exhibit proofs of their ignorance here, and must suffer for their obstinacy in a climate to which they are strangers. You must be a judge of the labour and outlay in bringing in new land, the tardy returns, and then, a market!

Gardeners are wanted here or perhaps a system of gardening; but a century or two must pass away, before a professed gardener will meet with due encouragement, or be respected as his abilities and behaviour deserve. There is no settled nobility or gentry here that know how to appreciate the value of such a confidential servant. At present he may claim, but he cannot receive, any higher consideration than is conferred upon an ignorant slave, and perhaps not so much. Such is the force of custom, and the ease with which a few common vegetables are produced here, that the generality of those who have country houses are satisfied without attempting necessary improvements. The labouring gardener in England can enjoy himself much better than the few gardeners that are here, who may be considered as isolated beings, having no intelligent companions to associate with for instruction or amusement, fitting their station and calling in life.

To persons who enjoy a moderate income, and choose to emigrate, the means of education for their children is a matter of consideration. A public academy, or college as it is called here, has been established; and one or two classical private schools, also, are now in repute in Cape Town. Several ladies' schools, of various pretensions, have lately been commenced, and every kind of useful and elegant acquirements may be obtained, without the disagreeable necessity of sending the children to Europe. Public amusements are few: during the winter months, Dutch and English plays are performed by amateur companies, as are also concerts. Horse-racing in spring and autumn. The domestic and select circles of private families are greatly advancing, and a general good feeling appears to prevail. The periodicals are, two newspapers, once and twice a week; a literary gazette edited by a liberal-minded and talented individual; and the *South African Quarterly Journal*, promising to be a valuable auxiliary to the South African Institution, if well supported. Religious toleration is sufficiently liberal; and a kindly feeling appears to exist in persons of different denominations, as none seem to despise or calumniate the others, and all appear anxious and ready with mutual assistance. Several liberal and useful institutions are supported for the instruction, &c., of the lower classes, both bond and free. — *J. B.*

ART. III. *Domestic Notices.*

ENGLAND.

CLIMATE of Bovey Tracey, Chudleigh, Devon, as to Plants. — On April 19. 1831, I had new ash-leaved kidney potatoes for dinner, from roots planted in January. The potatoes planted were exposed in the garden walks for six weeks last summer. *Petùnia* nyctaginiflòra, Fúchsia grácilis, Maurándya Barclayàna, and Véstia lyciöìdes have lived out in my garden during the winter. Six camellias have flowered under a veranda, into the border of which they are planted. Prímula præ′nitens has lived for the last three years in the garden during winter. — *J. G. C. Bovey Tracey, Chudleigh, Devon, April* 20. 1831.

Southampton Botanic Garden. — Sir, By your approval, I enter into the promised description of the Southampton Botanic Garden. Having stated the extent of ground and glass at p. 376., I now submit to you the number of houses, &c.: — 1 stove; 1 Botany Bay house; 1 house for camellias and orange trees; 2 Cape houses, and 1 propagating house. Two of these are heated by hot water. This garden contains a selection of individual specimens amounting to upwards of 4000, not including hot-house and green-house plants, which I plant out to take stock from; more particularly the new and rare kinds. By this mode I have proved many of the most ornamental house plants to be quite hardy, and shall be most happy to give you some account of them ere long. I shall not describe in what state of keeping these grounds are, nor the collection they possess, but will leave these to be determined by some botanist who has visited or may visit this establishment. You have headed mine of the 25th, "Spa Botanic Gardens;" I beg leave to state that the gardens formerly called "Spa Gardens" are the property of Mr. Evemy, not Mr. Page, and are occupied by the New Forest Archers, and now called the Royal Victoria New Forest Archery Grounds. Our botanic garden has no connection with the former. We have never had any tea-drinking here, neither is there any subscription whatever attached. Our nursery consists of large quarters of forest trees and fruit trees, with American and herbaceous plants. Specimen trees of the fruits are planted out, producing a beautiful effect, and affording information respecting the varieties, &c. In this nursery there are two green-houses and a pit for plants. I am, Sir, &c. — *James Ingram. Southampton Botanic Garden, June* 28. 1831.

Some Chestnuts which grew on a Tree from a Nut planted by the Hand of George Washington in March, 1797, *at the Country Seat of the late Judge Peters,* have been kindly sent us by our much esteemed correspondent, Dr. Mease of Philadelphia. They left that city, April 4th, packed in loam, and arrived in London, May 7th, unfortunately rotten. Similar seeds, sent to us in future, should be immersed in tallow. However, if we live seven years, it is our intention, before that time shall elapse, to gather with our own hands some memorials of Washington and of Jefferson, from the estates which belonged to these truly noble men. — *Cond.*

The charming Purple Saxifrage (Saxífraga oppositifòlia) is now in great beauty with me, having been in flower since the 1st of March, and is at present quite the glory of my garden. This lovely little alpine, certainly one of the choicest productions of Flora, succeeds with me better than, I think, I ever saw it do elsewhere; and this, I believe, arises from the circumstance of its not being overnursed, I might almost say, quite neglected and left to itself: for it stands the whole year round on my garden steps, fronting the south, with no other care or attention paid it than being occasionally watered in dry weather. I keep the plants in large pots, which they entirely fill, trailing over the rim and sides; at the present moment they constitute one entire mass of brilliant flowers, closely crowded together, not only on the surface, but hanging down like a curtain of purple to the very bottom of the pot, and so completely covering the whole that scarcely a particle of the foliage remains visible. While the plants are in flower I generally place them in the green-house, to protect the blossoms from the rain, &c., in order that they may last the longer. I believe this plant is not unfrequently injured by being placed in the shade; in which case the shoots are apt to be drawn up and weakened. Few plants require less attention in their cultivation, and certainly none reward us with a more diffuse display of most beautiful blossoms in the spring. I may add, that the soil in which I grow the saxifrage consists of a mixture of garden loam and peat, with a quantity of broken pot, brick, and sandstone interspersed among it. Yours, &c. — *W. T. Bree. Allesley Rectory, March* 11. 1831.

The Night-blooming Cereus (*Cèreus grandiflòrus*). — Sir, Mr. Maule, Stapleton Road Nursery, Bristol, last night gratified the public with the sight of a Cèreus grandiflòrus, with ten magnificent flowers in full bloom, and beautifully arranged for effect. It was one of the most splendid botanic sights ever witnessed here. Mr. Maule is very successful in flowering this species. The plant in question is but of a moderate size, yet this is its second time of flowering this season, and in a few days it will display eight more flowers. — *P. Masey, Jun. Bristol, June* 8. 1831.

George the Fourth Polyanthus. — A plant in full bloom has been sent us by our indefatigable and much-valued correspondent Mr. Saul. It is certainly a very perfect florist's flower: and it is worthy of remark, in order to be remembered by gardeners in the country who have to send flowers in pots to their families in town, that the plant was in a large pot; the pot being firmly fixed to the bottom of a strong box, and the mould kept in the pot by moss tied to it with packthread. — *Cond.*

Fine Vines at Great Finborough Hall, Suffolk. — Sir, In a late visit to the gardens of Roger Pettiward, Esq., at the above place, I derived high gratification from witnessing the prodigious vigour of the grape vines growing in a small house erected last year. I enquired when they were planted, in what soil, &c.; and from Mr. Nicholls, the intelligent and meritorious gardener there, I ascertained as follows: — Some of the vines were planted in March, 1830, and by the close of the year had made shoots from 20 to 40 ft. long. The remainder were turned out of pots in June, 1830, and had, by the close of the year, produced shoots from 10 to 20 ft. long. About two months since, in the present year, the vines of both plantings were taken into the house to be forced; and in this short interval they have made strong shoots more than 20 ft. long, some of which display an abundant crop of fine bunches. The compost in which these vines grow is formed of one quarter fresh loam with its turf out of a meadow, one quarter common soil of the garden, one quarter spit dung from an old hot-bed, one eighth rotten tan, and one eighth lime rubbish. These soils were all well mixed together; and, after the common soil of the border had been taken out to the depth of 4 ft., and the bottom well drained in the manner usual for grapes, the border was filled up with this compost. Mr. Nicholls further informed me that Aloysia citriodòra has survived in these gardens the severity of last winter; as has also Calámpelis scàbra, which is now full 10 ft. high, and proportionally strong: no protection was applied to either plant. A standard of Leptospérmum pubéscens, with very slight shelter, has also survived. I am, Sir, &c. — *Henry Turner. Botanic Garden, Bury St. Edmund's, May* 26. 1831.

British Society of Agriculture. — It is proposed to establish in London a central society for the improvement of the agriculture of the kingdom, and for effecting the following objects: — To provide a suitable building or rooms for the reception of a library, museum, &c.; to hold weekly meetings at certain seasons of the year; to procure, from the most eminent scientific men of the day, lectures on the application of the various sciences to agriculture, which might afterwards be printed; to correspond with foreign societies, and to form a centre of communication for those established in this country; to take in all the periodical and other scientific works published in any part of the world, and to print and circulate in a cheap form monthly digests of whatever useful matter they might contain; but principally to endeavour, by all means, to introduce into the schools at which farmers' children are now educated, the elements of the modern sciences.

It is supposed that, whenever our practical farmers shall become conversant with chemistry, entomology, botany, meteorology, &c., the face of our agriculture will be totally changed: but such knowledge can be conferred nowhere but at school, and the society might promote the establishment of such schools in various ways, either by providing the requisite instruction for the masters, and supplying them with proper books and apparatus; or by keeping the subject constantly before the public through their monthly publications, and by their influence with provincial societies.

In England we now produce on an average about a quarter of corn per acre more than is grown in France. Is there any absurdity in supposing it possible to produce a quarter per acre more than even we do?

The state of our population makes it necessary to adopt, without loss of time, efficient measures for increasing the productiveness of our soil. In 1801, 9,100,000; in 1831, 14,000,000; in 1861, 22,000,000.

If the rate of increase which has prevailed for thirty years past be continued for thirty years more, England and Wales will then contain twenty-two millions of inhabitants; being eight millions more than are now supported with difficulty. Unless, therefore, the produce of the soil be made to increase in a similar ratio, that is, unless the acre, which now bears 25 bushels of wheat, be made to bear 40, the people must starve, and the poor rate must absorb the whole rental of the country.

The expense of the Board of Agriculture established by Mr. Pitt was 3000*l.* a year. The annual income of the Highland Society of Scotland is about 2000*l.* — *W. Hawkins. Hitchin, Hertfordshire, May* 5. 1831.

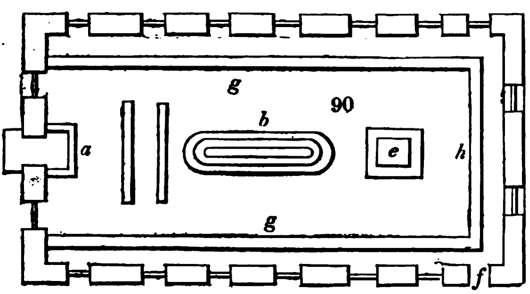
Such a society as that contemplated may do good: even the Board of Agriculture, though it occupied itself with petty details of culture and management, instead of endeavouring to reform our agricultural legislation, and strike at the root of tithes, and the general ignorance of farmers, still was not altogether useless. But we cannot bring ourselves to take much interest in societies where all the members are not equal in almost every respect; having hitherto in this country seen similar associations, with scarcely any exception, speedily degenerate into jobs. We look forward to the establishment, through the influence of Lord Brougham, of a system of national education by government, in which all useful knowledge will be taught to all; and the operation of this on the rising generation will fit them for deriving knowledge from books on the science of whatever art they may choose to pursue. It will also teach them how and when to cooperate together in societies, for the effecting of any particular object. — *Cond.*

SCOTLAND.

Dorýanthes excélsa. — Another beautiful specimen of this wonderful plant is in blossom at Woodhall gardens. It is the third that Mr. Henderson has succeeded in bringing into flower. We know of no other successful attempt, save that of Mr. Cunningham, at Comely Bank, near Edinburgh. The plant of last year was 24 ft. high. This one is not so tall by some feet, having come several months earlier into flower than either of the former, from the time of the stem making its appearance. The plant, however, is healthier and stronger, measuring at the base 14 in. diameter. The flowers, which resemble those of the orange lily, only they are larger and of a pink colour, are beginning to unfold themselves; their anthers are covered with a beautiful green pollen, and the cells are filled with a honied liquid; of these flowers there are nearly 100 upon a ramified umbel of about 2 ft. diameter. (*Glasgow Free Press*, March 23. 1831.)

Art. IV. *Hints.*

Cottagers' Show Articles. — Sir, In the *Cumberland Pacquet* of May 24. I have seen it announced, that at the show, in August next, of the Whitehaven Horticultural Society, " a premium from a member of the committee will be awarded to the cottager, not a gardener, whose garden is kept in the best order, combining the valuable properties of neatness and utility." This is a good project, as rewards thus offered to cottagers might bring into notice, and make generally known, valuable varieties of fruit, flowers, and vegetables of their raising, now only known to the purchaser, who takes care that no other person is aware of the good qualities of their productions. This I know to be a fact, from personal enquiry and decided proofs. As a further inducement to cottagers to bring to the shows of horticultural societies any vegetable, flowers, or fruit, possessing good qualities, that they cultivate, I would suggest that not only prizes be awarded to exhibitions by cottagers, but that they be allowed to offer at the shows their productions for sale to the visiters. To effect this object with the least possible inconvenience to the officers of societies, I submit the following plan (which will be found a modification of that published from me in Vol. III. p. 419.), in order to supply the additional accommodation required:—*Fig.* 90. *a*, a table or counter (surrounding the entrance door), on which the articles brought by members are received, and off which they are conveyed to the stage *b*, for general ornament and effect; *e* is the prize table for receiving those articles belonging to members to which prizes are awarded; *f*, a door for the admission of the cottagers with their baskets, the baskets to be labelled with the names of their owners, and brought into the room early in the morning; *g g*, benches for the baskets of the cottagers, who, as soon as they have placed their baskets on these benches, are to withdraw until the exhibition is opened. When it is opened, the cottagers are to re-enter at *f*, and they will then find such of their articles as have gained prizes placed on the bench *h*. They may then negotiate with the visiters for the sale both of their articles which have gained prizes, and those which have not; but no article must be removed from its place until the exhibition is closed; neither are cottagers to go into the society's space in the central part of the show room, but to remain behind the benches, as they attend free of all expense. This plan, as its details are few and simple, would give but little trouble to the officers of societies, and much increase the interest of exhibitions to members and their friends, and would, I trust, thereby increase the capability of every society that adopted it to encourage cottagers still farther. I am, Sir, &c. — *M. Saul. Lancaster, June* 2. 1831.



Sweet's " Florist's Guide" and a new Work on Roses. — Sir, Mr. Sweet, in figuring a beautiful new rose, the Duke of Wellington, in his *Florist's Guide* for June last, says, " As we have nearly finished our *Florist's Guide*, we will try to persuade our esteemed friend, Mrs. Kearse (late Miss Lawrance), to begin publishing the roses again, as there are numerous very distinct new varieties and hybrid species that are well worth figuring; and would, on quarto size, make one of the finest works imaginable." I cannot but express a hope that this suggestion will be attended to, if not by the lady mentioned, by some person who is competent. I think it would add greatly to the beauty of the work if the roses could be occasionally grouped, two or more varieties together. It appears to me, Sir, that you could not better promote the delightful pursuit of floriculture than by calling on all lovers of flowers to become subscribers to such a work. I claim your indulgence for thus trespassing: nothing but a desire to increase and improve the taste for those loveliest of flowers, roses, would have induced me to do so. Yours, &c. — *An Amateur. Saffron Walden, June* 22. 1831.

Cheapness, it is hoped, will result from this grouping; if not, it is doubtful whether any work on figures of florists' flowers will answer in Britain. The varieties of ranunculus, tulip, pink, carnation, &c., having respectively in most cases sprung from one species, retain the foliage and habit of that species so closely, as to render the exhibition of the foliage and habit of each variety unnecessary. Let, then, flowers of several varieties be given on each plate, either grouped, or distributed as medals are on a medallion board, and discriminative remarks on habit be supplied in the text. These would be sufficient means to enable florists to identify and name the flowers they cultivate, and not be beyond their pecuniary reach. Full length or half length portraits of individual varieties, as ornamental pictures to be looked at, are too expensive to be generally purchased.—*J. D. for Cond.*

The Dessert defective from January to June. — Sir, I beg to suggest the utility to be derived from premiums being offered for the finest supply of fruit for the table, raised under glass, from the 1st day of January to the 1st day of June; to consist of oranges, grapes, figs, melons, and pine-apples. This is the time of year when little can be obtained, and when the above would be doubly valuable. Yours, &c. — *Oatmeal. May* 9.

Art. V. *Coming Weather.*

Remarks on the Weather, during the Months of March and April, as extracted from the Register kept at Annat Garden, Perthshire, North Lat. 56° 23½′, above the Level of the Sea 172 ft., and 15 miles from the Coast.

March. The rain that fell in March was more than double the ordinary average, amounting to 3·3 in.; the greatest fall since 1822 was in March 1827, and measured 2·62 in. The temperature was 43·2°, or 2·6° above the average temperature for that month, at this place. Loud winds were frequent; the most remarkable storm of wind and rain commenced at two o'clock P.M. of the 12th, after five days of a clouded atmosphere. At the commencement the wind did not exceed 6½ miles velocity per hour, but towards evening it blew with nearly treble force, accompanied with thunder and lightning. The phenomena of this and two subsequent storms will be best seen by the following table: —

Phenomena of winds.				Fall of rain in inches and parts.	Height of Barometer.	Mean temperature during the storm.	Minim. temperature during the storm.
Dates.	Direction.	Velocity in miles per hour.	Duration in hours.				
12 13	S.W.	6 to 18½	26	1·15	28·31	37°	34°
15	S.W.	6 to 9½	9	·12	28·40	40	34
17	W.	9 to 11	15	·10	28·72	46	44
25 26	S.E.	7 to 11½	27	·22	29·01	89	37

The mean temperature for the first ten days of March was 43·5°; for the second ten days, 42·4°; for the last eleven days, 43·9°; for the month, 43·2°. The range of the thermometer for the month, from 32° to 53°. The mean height of the barometer for the same periods was 28·82, 28·88, and 29·57 in. From the 2d to the 7th, the mercury vacillated between 28·72 and 29 in.; from the 8th to the 10th between 28·82 and 29 in. On the 11th it fell to 28·70, and on the 12th to the unusual depression of 28·31. It continued below 29 till the 18th, and vacillated between 29 and 29·9 till the 30th, and rose to 30 in. on the last day of the month. The wind shifted from westerly points to due east on the 8th, where it continued two days; on the 10th it veered to the west, and continued to blow from that direction till the 23d; from the east and south-east on the four following days; from the west on the 27th and 28th, and on the following three days from the east. The only days of brilliant sunshine were the 3d, 7th, 18th, and 27th; on the rest the atmosphere was more or less cloudy.

April. In this month there has been nothing deserving the name of a storm to place on record. The mean temperature of the first ten days 45·3°; of the second ten days, 48·8°; and of the last, 48°. The mercury in the thermometer ranged between 31° and 60°, but in temperature there was no remarkably sudden fluctuation in this or the preceding month. The mean temperature for the month is nearly 2° higher than the ordinary average at this place, it being 47·3°. The mercury in the barometer for the above periods gave a mean height of 29·08, 29·37, and 29·67 in.; it vacillated from the beginning of the month to the 5th between 30 and 28·8 in.; from the 5th to the 11th between 28·55 and 29; from the 11th to the 26th between 29·5 and 28 in.; on the last four days of the month, between 28·95 and 28·6 in.; and this depression, with an easterly wind, indicates an additional fall of rain to the copious showers that have lately fallen. The depth in the rain gauge amounts to 1·8 in., nearly the ordinary average.

The velocity of the wind throughout the month did not exceed six miles per hour: it set in from the east on the first three days, the atmosphere being clear on the 2d and 3d; but, as not unfrequently happens on a change of the wind's direction, it became clouded on the 4th, when the wind shifted to the west, and some rain fell; after two days the wind again shifted to the east. This rapid shifting, and consequent mixture of different currents of air in the higher regions, produced a copious fall of rain on the 7th, the atmosphere still continuing cloudy. On the 8th and 9th the wind was variable, and some light showers fell, accompanied with distant peals of thunder. On the 11th the wind shifted to the west, and clear sunshine succeeded on the 12th, and continued, with little interruption, till the 17th; on that day the wind shifted to the east, and continued to blow gently from that point till the end of the month, with the exception of the 19th and 27th, on which days it was variable. On the 25th the atmosphere became cloudy, and showers, with little sunshine, have prevailed since that period.

Larches were in leaf here on the 5th, white-thorns on the 15th, maple on the 18th, horsechestnut on the 28th, and birch on the 30th. As I judge, the mean temperament at Howick will be something more than 1° higher than here, and at Southampton something more than 3°; vegetation will be proportionally forward, and it might add to the interest of our remarks if a few notes were taken by each of the progress of vegetation. Might I ask Mr. Rogers to point out four plants, the leafing or flowering of which, each of us might notice in every month? — *Archd. Gorrie. Annat Gardens, April* 30. 1831.

Meteorological Journal kept at Howick, Northumberland, above the Level of the Sea 91 Feet, and distant One Mile.

Phenomena of Winds.					Fall of rain or melted snow.	Height of Barometer.	Mean temperature during the storm.	Minim. temperature during the storm.
Dates.	Direction.	Commencement of storms.	Velocity in miles per hour.	Duration.				
March.								
11	W.	6 P.M.	12½	15	·35	29·2	43°	40°
15	S.	12 noon.	15¾	6	·15	29	41	38
16	W.	7 A.M.	6½	4	·10	29	44	42
24	N.E.	12 noon.	17	8	—	29·2	40	38
25	S.E.	9 A.M.	14½	9	·25	29·2	40	38

Mean temperature for the first ten days in March, 43·3°; for the second, 43·8°; for the last eleven days, 42·2°. Barometer for the same periods, 29·22, 29·25, and 29·89 in. Extremes of temperature, coldest, 1st, 31°; hottest, 27th, 56°. Depth of rain 1·9 in. Wind easterly 18 days, and westerly 13. On the night of the 7th, the aurora borealis displayed a bright and agreeable aspect. Mean temperature for the first ten days in April, 43·3°; for the second, 48·1°; and for the last ten days, 45·8°. Barometer for the same periods, 29·48, 29·68, and 29·35 in. Extremes of temperature, coldest, 4th, 32°; hottest, 15th, 62°. Depth of rain, 1·5 in. Wind easterly 20 days, and westerly 10. Several loud peals of thunder on the 10th; nearest distance 1½ mile. What does this, so early, prognosticate? There have been no storms to notice in this month. We had favourable weather until the 21st, since which the atmosphere has been obscured by mist and rain, with rarely a glimpse of sunshine.

The method I have taken for noting my remarks during the last two months will, I trust, correspond with Mr. Gorrie's prescribed plan, although it ought to differ in substance from his, and also from Mr. Rogers's: if otherwise, it will throw aside my theory, and render it completely useless and absurd; but trial is allowed by all to be the most indubitable proof. I am, Sir, &c. — *John Machray. Howick Gardens, April* 30. 1831.

Art. VI. *List of Plants included in the Botanical Periodicals reviewed, or elsewhere mentioned, in the present Number of the Gardener's Magazine as in British Gardens, but which are not included in the* Hórtus Británnicus.

This list will in future be prepared and published in this Magazine, every two months, for the convenience of the possessors of Loudon's *Hórtus Británnicus.* Every December these lists will be united, and published apart, in an annual Supplement to the *Hórtus Británnicus.* Where the genus is new a star (*) is affixed.

1980. ADE'SMIA.
microphýlla *Hook.* small-leaved ♄. ⌴ or ... va. sea. Y Valparaiso ... S s.l Bot. cab. 1692

*933. A'JAX Haw. Ajax. (A valiant Greek at the siege of Troy.) *Amaryllideæ.*
cérnuus *Haw.* drooping ☿ △ or 1 mr.ap Crea. W Spain ? ... O co Sw.fl.gar.2.s.101.3
2 corònâ plènâ *Haw.* full-crowned ☿ △ or 1 mr.ap Crea. W Spain ? ... O co Sw.fl.gar.2.s.101.4

979. ALSTRŒME'R*IA* 8043 pulchélla.
2 pilòsa *Lindl.* hairy-*leaved* ♃ ◺ spl 1 aut. S Chile ... S l.s.p Bot. reg. 1410

1064. ANTHE'RICUM.
? plumòsum *R.&P.* feather-*petaled* ♃ △] cu 1 ap W Chile 1829. D co Bot. mag. [illegible]

1605. AQUILE'GIA.
14288*a* Garnieri*ána* Swt. *Miss* Garnier's ♃ △ or 1½ my.jl P.Str hybrid 1829. D co Sw.fl.gar.2.s.103

521. AZA'LEA 4344 calendulàcea.
10 Stapleton*iána* Lindl. *Miss* Stapleton's■ or 4 my.jn Ro hybrid 1829. L p.l Bot. reg. 1407

1090. *BE'RBERIS.*
9065*a* dúlcis *Swt.* sweet-*fruited* ■ fr 8 mr Bt.Y Magellan 1830. L s.l.p Sw.fl.gar.2.s.100

1706. BIGNO'N*IA.*
16353*a* grácilis *Lo. C.* slender ♄ □ or 50 ap Y S. Amer. ... C lt.l Bot. cab. 1705

1794. BROWA'LLI*A.*
15986*a* grandiflòra *Grah.* large-flowered ⊔○ or 2 jn.d Li.Y Peru 1829. S p.l Bot. mag. 3069

2038. CAME'LL*IA* 18166 japónica
var. speciòsa *Hort. tr. Rawes's* showy ■ ⊔ spl 10 mr Dp.R China 1824. I l.p Chan. ill. 32

2553. CATTLE'Y*A.*
guttàta *Lindl.* spotted-*flwd* £ [△] or 1 ... G.Bd.W.P Brazil ... D p.r.w Bot. reg. 1406

116. *C*RO'CUS 1010 vérnus
4 leucorhýncus *Sab.* white-beaked ♉ △ or ½ mr.ap W.B seedling ... O co Bot. reg. 1416
Imperàt*i* Ten. Imperati's ♉ △ or ½ f.mr Li Naples 1830. O s.l Sw. fl. gar. 2.s.98

1308. *D*ICTA'MNUS.
10909*a* angustifòlius *Swt.* narrow-leaved ♃ △ or 2 my.jl Li Altai 1821. S s.l Sw. fl. gar. 2.s.93

2554. EPIDE'NDRUM.
22730*a* odoratíssimum *Lindl.* sweetest-sctd £ [△] fra 1 su G.Y Rio Jan. 1826 ? D p.r.w Bot. reg. 1415
Encýclia pàtens *Hook.* in Bot. mag. 3013, Macradènia lutéscens *Bot. cab.* 1556, but not of *Bot. reg.*

1173. *E*RI'CA.
§ v. Beaumont*iána* Roll. *Mrs.* Beaumont's■ ⊔ or 1 jn W C. G. H. 1820. C s.p Bot. cab. 1686

2900. *FI'*CUS.
25239*a* urophýlla *Wal.* tail-leaved ■ □ cu 2 jn Ap India 1829. C l.p Bot. cab. 1697

48. *GALIPE'A.*
462*a* odoratíssima *Lindl.* most fragrant ■ □ fra 2 my W Rio Jan. ... C l.p Bot. reg. 1420

2080. GLY'CINE.
bíloba *Lindl.* two-lobed ♄ ⊔ or 20 n V Mexico 1827. S l.p Bot. reg. 1418

*2538. GOVE'N*IA* Lindl. Govenia (? *Mr. Gowen*, an originater of splendid hybrids in *E*ríceæ.) *Orchídeæ.*
supérba *Lindl.* superb ♃ [△] or 1 mr Y Xalapa 1828. D s.lt Bot. cab. 1709
Probably the Maxillària supérba of *De la Lave.*

316. GREVI'LLE*A.*
2617*a* Seymoúr*iæ* Swt. MSS. *Mrs.* Seymour's■ ⊔ or 3 ap.my Ro N. Holl. 1823. C p.l Bot. reg. 1383
concínna *Lindl.* not of others.

975. HABRA'NTHUS.
phycelloìdes *Herb.* Phycella-like ♉ ⊔△ or ½ o S Chile 1805. O r.m Bot. reg. 1417

43. *J*ASMI'NUM.
323*a* pubígerum *D. Don* down-bearing ♄ or 10 mr.o Y Nepal 1827. C l Bot. reg. 1409
Wallich*iànum* Lindl.

58. JUSTI'C*IA.*
aspérula *Wal.* roughish ■ □ or 2 su Pk India 1829. C lt.l Bot. cab. 1681
quadrangulàris *Hook.* Bot. mag. 2845, *Hort. Brit.* No. 27985.

609. LOBE'L*IA.*
5141*a* hypocrateriifórmis *R. Br.* salver-*flwd* ⊔○ or 1 s P N. Holl. 1829. S p Bot. mag. 3075

1091. MAHO'N*IA.*
9070*a* diversifòlia *Swt.* different-leaved■ or 10? mr.ap Y M. Video ... Sk l.p Sw. fl. gar. 2.s.94
† 9070*a* glumàcea *Dec.* glumaceous ▪ or ... mr.ap Y Columbia 1827. L p.l Bot. reg. 1426
Bérberis glumàcea *Lindl.*

1783. *MI'*MULUS.
15897*a* perfoliàtus *Kth.* perfoliate £ ⊔ cu 2 s Y Mexico 1829. S l.p Bot. mag. 3067
Conobèa alàta *Grah.*

1414. *O'*XALIS.
11932*a* Déppi*i* Lo. C. Deppi's ♉ ⊔△ el ½ mr.n Cop.R Mexico 1827. O s.p Sw. fl. gar. 2.s.96

87. PIMELE'A.
799*a* diosmæfòlia *Lo. C.* Diosma-leaved ▪ ⊔ or 1 su Ro N. Holl. ... C s.p Bot. cab. 1708

1528. POTENTI'LLA.
13646*a* missoúrica *Horn.* Missouri ♃ △ cu 1 jn.au Y N. Amer. 1827. D co Bot. reg. 1412

2926. *P*TE'RIS.
25505a calomélanos Otto neat-dark £ [△] cu ½ ... Br C. G. H. 1830. D p.l Bot. cab. 1689

1339. RHODODE'NDRON.													
11025*b*	alta-clerénse *Lindl.*	Highclere	▲		spl	15	ap.my	C	Eng. hybrid	1827.	L	p.l	Bot. reg. 1414
11015*a*	Farrèræ Swt.	*Mrs.* Farrer's	▲		or	3	f.mr	Li	China	1829.	L	s.p	Sw. fl. gar. 2.s.98
1523. *RU'BUS.*													
13510*a*	spectábilis *Ph.*	showy	▲		or	4	ap.my	Ro	Columbia	1827.	L	co	Bot. reg. 1424
55. SCHIZA'NTHUS.													
477*a*	Hookèri Grah.	Hooker's		◎?	spl	2	jn.o	Ro.Li	Chile.	1828.	S	a.l	Bot. mag. 3070
1295. TURRÆ'*A.*													
10868*a*	?pinnàta *Wal.*	winged-*leaved*	▲	☐	or	...	mr	Pa.Ro	Silhet	1828.	C	l.p	Bot. reg. 1413
2262. VERNO'N*IA.*													
20475*a*	axilliflòra *Otto*	axil-flowered	♃	△	or	2	s.o	P	Brazil	1829.	D	lt.l	Bot. cab. 1690
2532. ZYGOPE'TALUM.													
22660*a*	crinìtum *Lo. C.*	hairy-*lipped*	¥	⊠	or	1	mr.au.n	Br.G.Li	Brazil	1829.	D	p.r.w	Bot. cab. 1687

ART. VII. *Retrospective Criticism.*

An Irish Cottage.—Sir, Hitherto I have been engaged in the study of the excellent matter contained in your Magazine, and other truly invaluable publications; but my peaceful lucubrations have been intruded upon by the appalling description of an Irish cabin, given by a correspondent of yours in the Magazine (Vol. VI. p. 657.); and there being, to use your own words, "something in the atmosphere of Ireland that engenders laziness," sufficient at least to prevent those competent to answer Agronome in the manner he deserves, I am tempted, I would rather say compelled, to hazard my unfledged pinions in the arduous task of supporting me in a conflict so unequal.

I would not be understood to assert that the "Irish cabin" of your facetious correspondent, the "dens burrowed in the side of a bank" of yourself, the "sties and hovels" which form the burden of the song chanted by the majority of our English visiters, are all of them imaginary cases. I am constrained to admit that the habitations of the lower orders in this country will not stand a comparison with even the ordinary English cottage; nay, I will go farther, and declare, that in many parts of the country they are unfit abodes for human beings. I only find fault with him whose selfish disposition and reckless want of feeling could induce him to exult in the sufferings and degradation of his fellow-men.

Having given us a lengthened detail of the good things with which his propitious fortune and the bounty of his employer have provided him,—having even, in order, if possible, to make us envy his happy lot, gone so far as to inform us that his helpmate is a very Venus (of whom, by the way, so far at least as matrimonial felicity is concerned, some other name in heathen mythology would have conveyed a more pleasing notion), this pampered child of fortune proceeds, addressing himself to you:—" I dare say, Sir, you have observed the features of an Irish peasant of the lowest grade; the curl of his lips, and how he shows his teeth, something like the passion of fear, pain, or disgust; just as if he were walking in snow, or on sharp flints or thorns, with his naked feet; for how can he afford himself proper clothing on 4*d.* or 6*d.* per day? I had, when gardener to Lord Doneraile, where your correspondent Mr. Haycroft now is,—I had, I say, ten men, four women, and four boys, all of whom I paid on a Saturday night with a two pound note. I dare say their wages are not much altered yet," &c. I shall not prolong these remarks by noticing this burlesque on the English language, committed too by one competent to coin a fictitious signature in Greek, and who possesses a library worth "scores of pounds;" nor the judicious allegory of the passion of fear, with a curled lip, walking on snow, or on sharp flints or on thorns, with his naked feet, &c.; I shall only remark that I am acquainted with much of

Ireland; and that I know of no part of it where the wages, without the addition of a house, or some equivalent, are so low as here stated; and that, if Lord Doneraile suffers his dependants to exist in the state of wretchedness depicted in your correspondent's letter, he richly deserves the odium which the observations contained in that letter tend to cast upon him.

Comparisons are odious; and the reflections which the ignorant were wont to cast on every country except their own, are, happily, even amongst that description of persons, growing obsolete: did I, however, choose to retaliate, I need only refer to the "description of an English cottage," by Sir John Cox Hippesley, Bart., in the 15th vol. of the Bath and West of England Society's Papers, which is too humiliating to be quoted. The effect of this description was to inspire me with regret, and with a conviction of the truth of Mr. Cobbett's assertion as to the state of degradation to which, from the enviable station on which he once stood, the English labourer has been reduced. Having, I trust, said sufficient to convince Mr. Howden that fame is not to be acquired by holding up to the scorn of the world a class of people who have been reduced to their present forlorn condition more by the neglect and oppression of their natural guardians than by any fault of their own, and regretting the occasion which called forth a communication so little calculated to advance the science in which the majority of your readers are engaged, and which is more than sufficient to occupy our every thought, I remain, yours, &c. — *Michael Murphy, Gardener to Lord Castlemain. Moydrum Castle, Athlone, March* 17. 1831.

*Grevílle*a *concínna of Brown, and Grevílle*a *concínna of Lindley.*—At p.201. we (i. e. *J. D.* for *Cond.*) erred egregiously in asserting the G. concínna of Lindley, in the *Botanical Register* (t. 1383.), to be identical with G. Cunninghàm*ii* of Brown's *Supplement.* No two plants of one genus need be more distinct. We ask pardon for the error, which arose from confusing the remarks of our kind informant, Mr. Sweet, who, in the same conversation in which he assured us that the G. concínna of Mr. Lindley, in the *Botanical Register* (t. 1383.), published January 1. 1831, is most perfectly distinct from the G. concínna of his own *Flòra Australásica* and of Brown, also gave us information respecting Bánks*ia* Cunninghàm*ii*. On Mr. Sweet's subsequently admonishing us of the error we had committed, we solicited the favour of a statement of the specific differences between the two Grevílle*æ* in question, that when we should correct the error those differences might be exhibited. This statement Mr. Sweet obligingly supplied on May 14.; too late for insertion in the June Number, but where, however, we inserted remarks on the Bánks*ia* Cunninghàm*ii* (p. 337.), and on Dìetes bícolor (p. 340.), with which he had also favoured us. Mr. Sweet's note is as follows: — "Dear Sir, I have waited to get a fine specimen of the Grevílle*a* in flower, and can now give you its full history and description. I raised it from seeds at the time I was with Mr. Colville. The seeds were given me about eight years ago, by a great friend of mine, the Honourable Mrs. Emily Seymour, of Woburn, Bedfordshire. This lady had received them from a person in Van Diemen's Land, for whom the Honourable Mr. Seymour had procured a situation there. The plant, which is decidedly a distinct species, and no variation of G. concínna, may be denominated G. Seymoúr*iæ*, in compliment to the above lady, and be thus characterised: — G. Seymoúr*iæ* Sweet. MSS.; foliis elongato-linearibus mucronatis planis, super glabris, subtus costâque sericeo-pilosis, ramulis sericeo-tomentosis, ovariis stylisque glaberrimis apice sericeo-pubescentibus, perianthiis extus adpressè pilosis intus densè barbatis, pedicellis ovario longioribus. This species belongs to Mr. Brown's first section Lissóstylis, and division A of that section, and must come in between G. strícta and G. ripària, but differs from these two, and, I believe, from all others in the section, by its flat leaves not recurved or reflexed at the margins. I have sent you flowers, that you may see that the ovarium is quite smooth, which organ in G. concínna is woolly; a character that places G. concínna in Brown's section Erióstylis. I am, Sir, &c. — *Robert Sweet. Chelsea, May* 14. 1831." Besides Mr. Sweet, both Mr. Robert Brown and Mr. George Don have attested the perfect distinctness of G. Seymoùriæ; and Mr. Don had in MS. denominated it G. Lindlèii previously to Mr. Sweet's describing the species as above. — *J. D. for Cond.*

Mr. Byers's Mode of cultivating Strawberries. — Sir, I am desirous that others should profit by my mode, as detailed in Vol. V. p.437. Last year I gathered fruit on the 29th of May; this day, May 24., I find several of the Roseberry ripe, and in a day or two Keen's Seedling will be ready for gathering: both, of course, without artificial aid. While, however, the fruit is so forward on the south side of the walls, the plants on the north sides are only now coming into blossom. The stems of the Wilmot's Superb, and even of the Alpine, are from 12 in. to 14 in. long, and the appearance of the crop is most encouraging; and, although the plants may with propriety be renewed evèry year, a portion of a wall left by me proves that they do not degenerate if left for a second crop. Let the walls, if possible, be made and planted in July; as the young plants will, in consequence, have the more time to make the growth necessary for fruiting strongly in the May and June of the following year. August is later than I like for planting, although I know it will answer, provided weather and plants are as one could wish. I have received a communication, informing me that a wall made on my plan, with limestone, was, three weeks ago, nearly one mass of blossom. I am, Sir, &c. — *W. R. Byers. Mount Pleasant, May* 24. 1831.

Erratum. — P. 272. line 19. for "Mr. Collins," read "Mr. Colling."

Art. VIII. *Queries and Answers.*

Vegetable Physiology. — After some years' practice in the "ancient art" of tree-planting, &c., it is not without some degree of mortification that I now begin to consider myself little better than a novice, and I must acknowledge it costs no small sacrifice of self esteem thus to confess it; but I hope my case will, at least, excite some degree of commiseration when it is considered that the subject has been so bandied about among "physiology," "analogy," and "metaphor;" illuminated by the manufacture (not the burning) of rush-lights, coronas of "wax-lights," "halos of gas," Latin sentences between crotchets, prose and poetry, from the sublime to the "bathos," that it can be no marvel if the simple mind of a wight like me should have got bewildered between the brilliant glare on the one side and the Cimmerian darkness on the other. It is a common saying that a fool at forty will never be wise, — perhaps that is true, perhaps not; but though no great way from that age myself, I assure you I am still willing to learn; and, lest that should be matter of doubt, I proceed to ask one or two questions, which I should be glad to have satisfactorily answered by any great luminary who will vouchsafe the information; caring nothing, so that sufficient light be let in, whether it proceed from a rush or a gas light. First, then, I am about to plant (when the weather gets finer) some peach, apricot, and cherry trees to train against walls: shall I be right, if I leave all the shoots full length the nurserymen please to send them? and shall I be following the principles of physiology in so leaving them? If wrong, in what degree shall I cut them, without violating these principles, and injuring my trees? Wishing to know the why and the wherefore of things, I should be glad to hear why a little thinning would be injurious to, say a lime tree 20 ft. high, which I may transplant next week, and in so doing shall of course curtail its roots considerably; and in what way such cutting can injuriously affect the tree, in its internal structure, or in its connection with or dependence on the elements on which it lives? Again, does the case of a plant of strawberry, established and putting forth stolons, apply to a large hard-wooded tree, just transplanted? or, is applying the circumstances of the one to the other any better than what logicians call "the logical vice" of reasoning from one thing to another? or does it amount to more than analogy? As to pruning and doctoring trees and plants, I have a natural antipathy myself to all unnatural operations; but, as I am and profess to be no more than a novice, I shall obtrude no opinions on yourself or your readers; but if any of your numerous, able, and enlightened correspondents will condescend to lighten the darkness that still (to me) broods over these subjects, they will confer a favour on, Yours, &c. — *Wamba, the Son of Witless. Surrey, Nov.* 16. 1830.

Our Queries on the Maclùra aurantìaca (Vol. VI. p. 104.) *answered.* — Sir, In consequence of your desire to be informed more particularly respecting the Maclùra, I wrote to the delegate in congress, A. H. Sevier, from the territory of Arkansas, where it abounds, and he promptly answered my letter. He says: — "I never knew the fruit to be used as an article of food. The timber is valuable on many accounts. It is, perhaps, the most durable wood in the world, and, I think, for ship-building preferable to the live oak. It is also valuable for furniture, being capable of receiving the finest polish, and, when seasoned and exposed to the air, it assumes a complexion not unlike mahogany. It is also an esteemed dye-wood. One of its trivial names is yellow wood. From its toughness and elasticity the Indians make their bows of it; and hence it is also called bow wood." In the report of Messrs. Dunbar and Hunter of their voyage up the Red River and Washita, they say, "the colour of the fruit, which had fallen before maturity, though it appeared faded, still retained a resemblance to pale gold." The tree, in its native soil, when laden with its golden fruit, nearly as large as the egg of an ostrich, presents the most splendid appearance; its foliage is of a deep green, resembling the varnished leaf of the orange tree, and no forest tree can compare with it in ornamental grandeur. It is deciduous; the branches are full of short thorns. Nuttal saw trees in the Arkansas territory 12 and 18 in. in diameter, and between 50 and 60 ft. high. (*Travels*, p. 118—158.) — *J. M. Philadelphia, March* 6. 1831.

Destroying Insects by Steam. — About twenty years ago, one of Sir Joseph Banks's hot-houses at Spring Grove was fitted up with steam-pipes instead of the common flue; and with proper valves to allow the escape of steam when wanted, for the purpose of refreshing the plants. The plants were completely covered with the insects called the white bug; but after steaming the house about fourteen days (not with any idea of destroying the insects) they wholly disappeared. From this circumstance I was induced to construct the apparatus of which you have heard. This invention was described to the Society of Arts here, about the end of its last session in 1830; but I am not aware of its report having been read. I may mention to you, that even although steam from water should be found ineffectual or tedious in its operation, yet, were it possible to destroy the insects by aqueous poison, it can be applied only in the form of steam. — *James Grieve. Edinburgh, Nov.* 4. 1830.

A Residence in Devonshire. (p. 244.) — [We insert the following, in consideration of the pains taken by J. G. C.; but we must decline any future communications, as irrelevant to our object. *Cond.*] Dawlish, Teignmouth, Starcross, Exmouth, have an increase of price in the season; otherwise the same report might serve for these places in regard to provisions and houses. Torquay is the resort of the nobility. The Dart and Teign rivers are within five miles of each other, and supply the salmon, salmon-peel, and trout. Rent of a house, consisting of four rooms on the ground floor, six sleeping rooms, kitchen, wash-house, garden, and five or six acres of land; house and garden about 55*l.* per annum, or perhaps 60*l.*, if in complete order fit to receive a tenant; and five or six acres of land, if good and near the house, 30*l.* per annum: the tenant discharging the taxes. Price of such a small freehold, about 2000*l.* Price of daily labour in husbandry, 1*s.* 6*d.*; for carpenters and bricklayers, 2*s.* 8*d.* Soil, a rich loam, with a substratum of clay in the valleys, of granite on the western hills, of lime on the south, and calcareous on the east. Relative to poor's and other rates, the houses in Chudleigh are rated at half their real value, land at about two thirds. Beef and mutton, 6*d.* per pound; pork less. Chudleigh has an excellent supply of fish, which is very cheap. Coals are about 17*s.* per quarter, including carriage twelve miles from Teignmouth. Wood, 3*s.* per cwt., delivered. Fat bullocks, about 9*s.* per score; fat sheep, 6*d.* per pound. Lime, 5*s.* 6*d.* per hogshead. Bricks, 6*s.* per hundred. Elm, 1*s.* 9*d.* to 2*s.* per foot; white deal, 1*s.* 10*d.*; red deal, 2*s.* 6*d.* The neighbourhood devoid of fogs; the prevailing winds west and south-west. The high table land of Dartmoor breaks the showers of the Atlantic before they reach our district. Within an area of seven miles, Chudleigh, Bovey Tracey, Newton, and Ashburton might be included in this report. — *J. G. C. Bovey Tracey, Chudleigh, Devon, April* 20. 1831.

ART. IX. *Horticultural Society and Garden.*

MAY 3. 1831. — *Read.* A paper on the Means of prolonging the continuance in Culture of valuable Varieties of Fruit; by T. A. Knight, Esq.

Exhibited. Calceolària corymbòsa, from Mr. James Young; a specimen, nearly 3 ft. high, which had been treated with manured water. *E*rìca múndula and mirábilis, Eutáxia *my*rtifòlia, Daviès*ia* *u*lícina, Chorizèma Henchmánn*i*, from Messrs. Chandler. Easter pippins of 1829 and 1830, from Captain Downes.

Also, from the Garden of the Society. Flowers: *P*rùnus serrulàta, Double-flowering French Cherry, Double-flowering Common Cherry, Wistàr*ia* Consequà*na*, *R*òsa Bánks*iæ* lùtea, *C*ércis *S*iliquástrum, Double-flowering Furze; *Pæònia Moútan*, varieties Bánks*iæ*, *r*òsea, and *p*apaveràcea; *Pæònia* tenuifòlia, 3 varieties; Single Pæonies, *L*upìnus nootkaténsis, Show Tulips, Double Tulips, Parrot Tulips, Púrsh*ia* tridentàta, Pentstèmon Scoulèr*i*, Téllima grandiflòra, Azaleas, *L*eucòjum æstìvum, *L*eucòjum pulchéllum, *C*áltha palústris flòre plèno, *Rìbes* multiflòrum, *Rìbes* aúreum serótinum, Schizánthus pinnàtus, Schizánthus pórrigens, Calceolària angustifòlia, *A*nagỳris índica, *H*ibíscus *R*òsa-sinénsis. — Fruits: Keen's Seedling Strawberry, Flat Peach of China.

May 17. — *Read.* Letters from Mr. David Douglas, dated Columbia River, October 11. 1830; and from Drummond Hay, Esq., dated Tangier, 6th of April, 1831: also an Abstract of the Temperature, as indicated by the different Thermometers in the Society's Garden.

Exhibited. Hybrid Cactus, from the Comte de Vandes. Boròn*ia* serrulàta, Azàlea índica (yellow,) and Keen's Seedling Strawberry, from Mrs. Marryat.

Also, from the Garden of the Society. Lupines, 4 kinds; Pentstemons, 2 kinds; Roses, 5 sorts; 2 *P*æòn*ia Moútan*; Single Pæonies, 8 kinds; Wistàr*ia* Consequà*na*, 3 varieties of *P*ỳrus, Edwárds*ia* grandiflòra, Gesnèr*ia* rùtila, *M*álva purpuràta, Sphácele campanulàta; Sinníng*ia*, 4 kinds; *A'*lnus cordifòlia, Aérides guttàtum, Thermópsis *f*abàcea, Collíns*ia* grandiflòra, Cotoneáster rotundifòlia; *C*ratæ`gus, 4 kinds; Pine-apple, Hesketh's No. 1.

June 7. — *Exhibited.* Caffre Corn, and Pear unnamed, from the orchard of J. N. Colyn, Esq. Little Constantia, Cape of Good Hope, presented by John Reeves, Esq. Black Hamburgh Grapes, from C. Welstead, Esq., the produce of an old vine at Valentine's, the parent of the Hampton Court vine. *I'ris Xíphium* and Ranunculuses, from Mr. H. Groom. A collection of Calceolarias, Double Rockets, and 22 sorts of Heartsease, from Mr. James Young, F.H.S. A collection of Azaleas, Rhododendrons, and *Spiræ'a* bella, from the Earl of Caernarvon. Miscellaneous Flowers, from Mr. R. Donald. Asparagus, 112 heads, weighing 30 lbs., from Mr. R. Grayson of Mortlake.

From the Society's Garden. 4 sorts of *R*òsa índica, Drummond's Thornless Rose, Rose de Lisle, Garden Roses, Scotch Roses; *Æ'*sculus, 4 kinds; *C*aprifòlium, 2 kinds; Wistàr*ia* frutéscens, Azaleas, Eschschóltz*ia* califórnica, *I'*ris *X*íphium, *L*upìnus flexuòsus, Collíns*ia* grandiflòra; *Pæònia*, 3 kinds; *L*upìnus polyphy̆llus álbus; Pentstèmon, 3 kinds; *D*elphínium dictyocárpum, Aérides cornùtum.

June 21. — *Exhibited.* A Seedling *G*ladìolus, two varieties of the Noisette Rose, several varieties of Hybrid Digitàlis, Campánula Mèdium (a new variety), and *C*lématis angustifòlia, from William Wells, Esq., F.H.S. A collection of Pinks, from Mr. Hugh Ronalds. About 400 species of Rose, and some fine specimens of Hybrid Calceolarias, from Mr. James Young. Seedling Roses, from Mr. Russell of Battersea.

Also, from the Garden of the Society. Flowers: *G*èum chilénse, *Œ*nothèra Fraséri, Calceolària arachnöídea; Pentstèmon digitàlis, ovàtus, venústus, diffùsus, glandulòsus, speciòsus; Quisquàlis índica, *L*ílium japónicum, *I'*ris *X*íphium, Gíli*a* capitàta, Eschschóltz*ia* califórnica, Brodiæ'*a* congésta, *L*upìnus tomentòsus var., Clárk*ia* pulchélla, *Pæònia* albiflòra frágrans, albiflòra Hùme*i*; Rose Clare, Wells's Noisette, Seven Sisters Rose, Watts's climbing China Rose, Double Purple China Rose, Bizarre de la Chine Rose, *R*òsa rùga. — Fruit: Keen's Seedling Strawberry, Old Pine Strawberry, Grove End Scarlet Strawberry, Roseberry Strawberry, Black Roseberry Strawberry; Knight's Scarlet-fleshed Strawberry, more red inside than out; Dudson's House Scarlet Strawberry, great bearer.

July 5. — The Officers reported that at the Exhibition of Fruit in the Horticultural Society's Garden, during the Fête, June 22. 1831, the following Medals were awarded: — A large silver medal to Mr. William Deas, gardener to His Grace the Duke of Norfolk, at Arundel Castle, for a collection of Pines, Melons, Figs, Peaches, and Nectarines. Also a large silver medal to Mr. William Dolby, gardener to J. J. Guest, Esq., for four Queen Pines. A Banksian medal to Mr. Joseph Paxton, gardener to His Grace the Duke of Devonshire, at Chatsworth, for Pines, Peaches, Nectarines, and Grapes. Also a Banksian medal to Mr. John Wilson, gardener to the Right Honourable the Earl of Surrey, Worksop Manor, for Grapes, Peaches, and Nectarines. Also a Banksian medal to Mr. Selby Bennett, gardener to the Right Honourable the Earl Manvers, for a Providence Pine. Also a Banksian medal to Mr. John Bowers, gardener to the Right Honourable Lord Selsey, Westdean House, for Nectarines and Grapes.

Read. A paper on the Importance of the Leaves of Herbaceous Plants, by the author of the *Domestic Gardener's Manual.*

Exhibited. A collection of Double Georginas, from Mr. Thomas Ingram of Frogmore Gardens. A Calceolaria raised from seed of C. Fothergílli, fertilised by C. corymbòsa, from Miss Martineau, F.H.S. Seedling Strawberries, from Mr. Joseph Myatt, Manor Farm, Deptford. These were very beautiful, and of extremely high flavour.

Also, from the Garden of the Society. Elton Seedling Strawberry, Green Ditto, Black Eagle Cherry; Elton Cherry, from a standard; Barnet Raspberries, Woodward's Red Globe Ditto, Rough Cane Ditto, Bromley Hill Ditto, Taylor's Paragon Ditto; Black Currant, with green fruit; varieties of Gooseberries, Poívre*a* coccínea, Quisquàlis índica, Clárk*ia* pulchélla; Pentstèmon, 3 kinds; *Œ*nothèra, 7 kinds; a very fine collection of Garden Roses, *L*upìnus ornàtus, Eschschóltz*ia* califórnica, Collòmia grandiflòra, Wheeler's Seedling *P*hlóx, Shepherd's Seedling *P*hlóx.

Art. X. *Covent Garden Market.*

	From			To		
	£	s.	d.	£	s.	d
The Cabbage Tribe.						
Cabbages, per dozen:						
White - -	0	1	0	0	2	0
Plants, or Coleworts -	0	2	0	0	2	6
Cauliflowers, per dozen -	0	1	0	0	5	0
Legumes.						
Peas - per half sieve	0	1	3	0	2	0
per sieve	0	2	6	0	6	0
per sack -	0	5	0	0	14	0
Beans, per half sieve -	0	1	0	0	0	0
Windsor per ½ sieve	0	1	0	0	1	6
per sack	0	5	0	0	9	0
Kidneybeans, per ½ sieve -	0	2	6	0	3	6
Scarlet do. - - -	0	2	0	0	3	0
Tubers and Roots.						
Potatoes - per ton	4	0	0	4	10	0
per cwt.	0	4	0	0	5	0
per bush.	0	2	0	0	2	6
Scotch, per bushel -	0	2	6	0	0	0
New, per pound -	0	0	3	0	0	6
Turnips, White, per bunch	0	0	2	0	0	4
Carrots, per bunch:						
Young - - -	0	0	8	0	1	0
Horn - - -	0	0	6	0	0	9
Horseradish, per bundle -	0	2	6	0	5	0
Radishes:						
Red, per dozen hands (24 to 30 each) - -	0	0	6	0	0	9
Turnip, White and Red, per bunch: - -	0	0	1	0	0	0
The Spinach Tribe.						
Sorrel, per half sieve -	0	1	0	0	0	0
Patience Dock, per ½ sieve	0	1	6	0	0	0
The Onion Tribe.						
Onions:						
For pickling, per ½ sieve	0	4	0	0	5	0
Green (Ciboules), p. bunc.	0	0	4	0	0	6
Leeks, per dozen bunches	0	3	0	0	0	0
Garlic, per pound - -	0	0	9	0	0	0
Shallots, per pound - -	0	0	0	0	1	6
Asparaginous Plants, Salads, &c.						
Asparagus, per hundred -	0	3	6	0	5	0
Lettuce, per score:						
Cos - -	0	0	9	0	2	0
Cabbage - -	0	0	0	0	2	0
Celery, per bundle (12 to 15)	0	1	6	0	2	0
Small Salads, per punnet -	0	0	2	0	0	3
Watercress, per dozen small bunches - - -	0	0	6	0	0	8
Burnet, per bunch -	0	0	1	0	0	0
Pot and Sweet Herbs.						
Parsley, per half sieve -	0	1	0	0	1	6
Tarragon, per dozen bunches	0	6	0	0	0	0
Purslain, per punnet -	0	0	9	0	1	0
Fennel, per dozen bunches	0	0	0	0	2	0

	From			To		
	£	s.	d.	£	s.	d.
Thyme, per dozen bunches	0	0	0	0	3	0
Sage, per dozen bunches	0	0	0	0	2	6
Mint, per dozen bunches	0	0	0	0	2	6
Peppermint, dried, per dozen bunches - -	0	0	0	0	2	0
Marjoram, per doz. bunches	0	0	0	0	4	0
Savory, per dozen bunches	0	0	0	0	2	6
Basil, per dozen bunches -	0	0	0	0	5	0
Rosemary, per doz. bunches	0	0	0	0	5	0
Tansy, per dozen bunches	0	0	0	0	2	0
Stalks and Fruits for Tarts, Pickling, &c.						
Angelica Stalks, per pound	0	0	0	0	0	5
Sea Samphire, p. small pun.	0	0	4	0	0	6
Capsicums, per hundred -	0	5	0	0	8	0
Edible Fungi and Fuci.						
Mushrooms, per pottle -	0	1	3	0	0	0
Morels, per pound - -	0	14	0	0	0	0
Truffles, per pound:						
English - - -	0	14	0	0	0	0
Foreign - -	0	14	0	0	0	0
Fruits.						
Peaches, per dozen -	0	10	0	2	2	0
Nectarines, per dozen -	0	12	0	1	4	0
Apricots, per dozen -	0	4	0	0	0	0
Almonds, per peck -	0	6	0	0	0	0
Plums, per punnet:						
Dessert - - -	0	2	0	0	3	0
Green Gages - -	0	2	0	0	3	0
Cherries, per pound -	0	0	6	0	2	6
Gooseberries, per half sieve	0	2	6	0	5	0
Currants, per ½ sieve:						
Black - - - -	0	5	0	0	7	0
White - -	0	4	0	0	5	0
Red, for Wine - -	0	5	0	0	6	6
for Dessert - -	0	7	6	0	0	0
Raspberries, Red, per gal. (2 pottles) - - -	0	0	9	0	1	6
Strawberries, per gallon (2 pottles) about 3 pints	0	1	6	0	2	0
Pine-apples, per pound -	0	5	0	0	10	0
Hot-house Grapes, per lb.	0	2	0	0	6	0
Melons, per pound -	0	1	0	0	1	6
Cucumbers, per brace:						
Frame - - -	0	0	8	0	1	6
Handglass, per dozen -	0	4	0	0	6	0
Oranges per dozen -	0	1	6	0	3	0
per hundred	0	10	0	1	10	0
Bitter, per hundred -	0	2	0	0	4	0
Lemons per dozen -	0	1	0	0	2	6
per hundred	0	5	0	0	16	0
Sweet Almonds, per pound	0	3	0	0	0	0
Brazil Nuts, per bushel -	0	12	0	0	16	0
Barcelona - - -	1	2	0	0	0	0
Walnuts, for pickling per hundred - - -	0	2	6	0	3	6
Gherkins, per 1000 -	0	10	0	0	12	0
Radish pods, per ½ sieve	0	2	6	0	0	0

Observations. The effects of the unseasonable frosts in May last have been sensibly felt in the deficiency of the crops of fruit as furnished in the supplies to our market generally, but the severity of the loss to the growers has not yet been felt in its extreme, as it is in the later sorts of fruit, more particularly, the failure will be experienced. Strawberries, from the great breadth cultivated for the supply of the London markets, have been furnished in tolerable quantities, and, during the height of the season, at reasonable prices. Gooseberries have been plentiful, and of good size and excellent quality, at fair, remunerating prices. Currants are a very short crop, and by no means so fine in the bunch as usual: the price throughout the season has been high. Our best supply has been from the lower part of Kent, where they are now cultivated extensively. The better and finer sorts of cherries, such as May Dukes, Bigarreaux, White and Black Hearts, have been very scarce and dear. The more common varieties, such as

Flemish, Kentish, Maroons, &c., have been rather plentiful, and, considering the scarcity of other sorts, have sold at very moderate prices. Pears, of the earlier varieties, are a partial crop; but none have yet been sent to market, except a few Citron des Carmes and Green Chisels. Apples, especially the earlier and better sorts, which are cultivated in the London district, prove almost a total failure. A few solitary baskets are here and there to be seen at market of Summer Juneatings, Hawthorndeans, and Codlins. A few of the later and hardier sorts are said to be a crop, but very partially so. At present we have no information as to the prospects in Normandy or Flanders, from both of which places we usually, in scarce seasons, have obtained pretty large supplies. Apricots are a good crop, and likely to be fine. Nectarines and peaches also plentiful and good. Grapes are middling, but nothing can yet be said as to their ultimate ripening. Melons have been imported from Holland rather freely, and of very good quality: our own supplies have been latterly good, and consequently the prices are now moderate. Pine-apples, of fine quality and size, have hitherto realised good prices, but have not been much in demand: latterly they have been more abundant, and the prices considerably lower.

Vegetables generally have realised very fair prices, and have been in demand; so much so, that we have not had often more than an adequate supply. Peas did not come to market so soon as last year by ten days: but, owing to the effect of the frost on the earlier crops, the second season came to market so closely on the first, that the prices quoted in May were only maintained for a day or two; since which time they have seldom been more than usual in the season, although the crop is considered to have been generally defective. Beans are not yet in full season, but they do not promise well. Of French beans the prospect is very promising, and the supplies will doubtless be very large; but, as the crops of late peas have been materially affected by the dry, hot weather in the end of June and beginning of July, they will shortly find ready sale at fair prices. Gherkins also promise well, and, should the weather again become warm, very large quantities may be expected; and, as we have had, for the last two seasons, but very short supplies, and as the crop of walnuts this season is almost entirely destroyed, they will probably be wanted, and meet with ready sale.

Of potatoes there can be little doubt, from the late plentiful and general rains, we shall have an excellent crop, and of good quality, which, with the facility also created of planting out largely broccolis, savoys, coleworts, &c. &c., give promise of full markets at very reasonable prices. — *G. C. Covent Garden Market, July* 18. 1831.

ART. XI. *Obituary.*

DIED, May 11., in his 64th year, at Croome Park, *Mr. Dean*, botanical gardener there during a period of nearly 40 years. Mr. Dean was the author of *A Description of Croome Park and Grounds, &c.* 1 vol. 8vo.

At Warwick, May 15., *Joseph Brookhouse, Esq.*, in his 74th year. Mr. Brookhouse was distinguished for his knowledge of horticulture; as evinced by several papers in the *Horticultural Transactions*. He was in his ordinary state of health when he showed us his garden on the 1st of May; but, being very weak, complained of the failure of his memory, and other infirmities, and, in short, said, "I have outlived myself."

Lately, at Cottingham, near Hull, in the 70th year of his age, *P. W. Watson, Esq. F.L.S.*, author of *Dendrològia Británnica*, a scientific botanist, and one of the founders of the botanic garden in Hull.

Sept. 7. 1830, at Rotherham, much respected, *Mr. John Cuthbert*, gardener and seedsman.

THE
GARDENER'S MAGAZINE,
OCTOBER, 1831.

PART I.

ORIGINAL CORRESPONDENCE.

ART. I. *General Results of a Gardening Tour, during July in the present Year, by a circuitous Route from Manchester, by Chester and Liverpool, to Dumfries.* By the CONDUCTOR.

WE left Manchester on July 1., and precoeded to Knutsford (visiting Longford, the Stretford Nursery, and *Dunham Massey; Caldwell, Son, and Picking's Nursery; *Tatton Park, *High Leigh, *Mere, Mere Farm, and *Tabley); Northwich (the Beeches, *Vale Royale Abbey, and Delamere Forest); Chester (Eaton Hall, the Bache Pool Nursery, Hoole House, and *Hootton House); Liverpool (the Botanic Garden, the Public Cemeteries, St. James's Walk, the Walton Nursery, St. Domingo Nursery, Maghull Nursery, Wavertree Nursery, Cunningham's Nursery, and the Prescot Nursery, River Bank, West Dingle, Oakland Cottage, Aigburgh, Green Bank, Mossly Hill, Otterspool, Rose Bank, Dingle Head, Dingle Lodge, Farnfield House, Dingle Bank, Park Chapel and Cemetery, *Croxteth Park, *Knowlsley Park, Dovecote House, Gateacre, the town gardens of Charles Horsefald, Esq., and of —— Appleton, Esq., the Railway, and Reid's Farm on Chat Moss); Ormskirk (Campbell's Nursery and Market-Garden, *Lathom House, and *Rufford Hall); Preston (Taylor's Nursery); Garstang (Falcon Cottage); Lancaster (Hargreave's Nursery, Conolly and Son's Nursery, the Lune Nursery, Saul's Pomological Garden, the garden of the Lunatic Asylum, the town gardens of Mr. John Richardson and Serjeant Walmsley, Lune Villa, Lune Terrace, Slyne House, Halton Hall, Halton Rectory, Grasyard Hall, and *Quernmoor Park); Yealand (the villa of William Waithman, Esq., and Moorecombe Lodge); Milnthorpe (*Dallam Tower, and *Leven's Hall); Castle Head (Eller Hall); Bowness (*Storr's Hall, and the garden of —— Starkey, Esq.); Ambleside (Rayrigg, Elleray the villa of the poet and professor Wilson, Rhydal Hall, Rhydal Mount the residence of the poet Wordsworth, and Ivy Cottage); Grasmere (the Hollies, and the cottage and grounds of Samuel Barber, Esq.); Keswick (Vicar's Isle, Kerr's Nursery, and the residence of the poet Southey); Penrith (Lowther Castle, *Brougham Hall, *Carlton Hall, and the Penrith Nursery); High Hesketh (Armenthwaite Castle, and Armenthwaite Villa); Wetherall (*Corby Castle, and the bridge of the Carlisle and Newcastle Railway); Carlisle (Hutton's Nursery); Longtown (*Netherby); Langholme (*Langholme Lodge, Woodhouselee, Woodslee, and the Priory); Annan (the garden of —— Thom, Esq., and *Glen Stewart); and, lastly, Dumfries, where we remain to arrange our *Magazine of Natural History* for September, and to write this article, and some reviews and notices for the Gardener's Magazine for October.

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* Mansion residences thus marked (*), for the reasons given in p. 385.

The Geology of this Tract of Country assumes two very distinct characters. First, the red sandstone, which our readers will recollect had prevailed from the neighbourhood of Banbury to near Ashbourne, and recommenced near Stockport, continues thence through Manchester to Chester, and by Liverpool to the neighbourhood of Lancaster; leaves off there, and recommences at Penrith, continuing to Dumfries. Secondly, the schistus or clay rock, which we had not before met with, commences a few miles beyond Lancaster, and continues throughout the hills and mountains of the lake district. The schistus on the west side of Yorkshire adjoining Lancashire is covered by thick beds of limestone, and sometimes alternates with beds both of limestone and sandstone; the same beds are continued into Lancashire towards the lake district. The schistus and the limestone strata rise at the same angle; but Mr. Bakewell, who is well acquainted with the country, informs us, in his *Introduction to Geology*, that the thick beds of schistus, or greywacke slate, are disposed to cleave or divide into partings nearly vertical, which have been mistaken for strata seams. Some modification of the greywacke may be said to form the prevailing rock of the lake district, but there is some granite near Shap in Westmoreland, and also near Wastewater. Good roofing slate is found in various parts of the lake district. In the district immediately surrounding the lakes, the beds of greywacke, roof slate, and felspar porphyry, which compose the higher mountains are more elevated and contorted than the schistus and limestone beds which range through the western side of Yorkshire into Lancashire.

The natural character of the surface of the country forms two very distinct features: the lake district being hilly and mountainous; and all the other tract passed over, flat or gently varied.

The soil on the red sandstone is almost everywhere light, free, and generally deep, because the gritty stone from which it is formed readily decomposes. The soil in the schistose district is fine, compact, clayey rather than sandy, very thin on the eminences, and only deep in the valleys; this genus of rock decomposing but very slowly. The soil and surface on the sandstone district are well adapted for the culture of corn, and all the roots and herbage plants of agriculture, especially if the climate be somewhat moist; the schistose district, under a moist climate, is adapted for the growth of timber on the eminences, and for pasture on the sides of the hills and in the valleys. Had the sandstone been as difficult to decompose as the schistus, the whole tract of country where it prevails must have remained one rocky surface, covered for ages with little else than lichens: had the schistose rocks of the lake district not been considerably elevated, the weather, and especially the rain, could not possibly have had so much effèct in reducing their surface, nor would those numerous crevices have existed, which alone render it possible for the roots of trees to establish themselves amongst them.

Irrigation of that species called catchwork might be carried to a great extent on the sides of the hills and mountains; but the grass produced, though greater in quantity, would no longer be of the same nutritive and aromatic quality that it is at present. In various places, where irrigation has been employed, the finer *Pòæ*, *Festùcæ*, Cynosùrus, and Anthoxânthum have given way to cock's-foot grass, and the coarser species of *A*gróstis, *A*vèna, and *P*òa.

The hilly district, besides being favourable for the growth of trees and grasses, is also particularly so for the establishment of machinery to be driven by water. This district has scarcely at all been employed in this manner; but, were it found necessary to resort to water as a primary power instead of steam, the hills and mountains of Cumberland and Westmoreland would be found of immense value, and the water which might be collected on them, in zones, as hereafter described, would probably be more than sufficient to move all the machinery now in use on the island. To produce a maximum of effect by the water which falls on any hill, it ought to be collected in zones, the upper zone being formed 50 or 100 ft. lower than the summit of the hill or mountain, and each succeeding zone being made at a distance below the other, of a foot or two more than the diameter of the water-wheel to be driven by it. The number of wheels of 50 ft. diameter which might thus be driven between the foot and the summit of a conical mountain 1500 ft. high, and whose base covered an area of two thousand acres, might easily be calculated; and the calculation would furnish data for estimating the power of any number of irregular mountains. It may possibly happen that in some future age, when the coal mines are exhausted, the manufactures of Britain will be transferred from the plains of Lancashire, Warwickshire, Staffordshire, Nottinghamshire, and other counties, to the highlands of Scotland, to North Wales, and to the lake scenery of Cumberland and Westmoreland. To those whose patriotism can embrace a period of a thousand years, this view of British manufactures may be consolatory. As to coal for domestic fuel, if all the coal, not only in Britain, but in the whole world, were exhausted, it would be easy for every family to grow its own fuel; even without any farther improvements in the mode of application, than those which have been already suggested (Vol. VI. p. 145.), or any new discoveries in chemistry. An easy method of expressing, from common air, sufficient heat for all domestic purposes, may probably be discovered long before coal is exhausted.

In the mean time, the lake district, besides its adaptation for the growth of timber and for pasture, is, by its varied surface, rocks, and waters, admirably suited for the summer residences of persons engaged in business in towns; and as soon as railroads are completed between London and the large manufacturing towns of the north, including Lancaster and Carlisle, an event which must inevitably take place before ten years have elapsed, we hope to see the hills thickly studded with villas and cottages from their bases to their summits. This seems to us the second step in the progress of the application of the lake scenery to the purposes of human use and enjoyment, as covering it with pasturage and wood was the first, and as the establishment of water-mills will be the third. We are aware how much this prospective view will shock a number of the present residents on the lakes; but we cannot sympathise with exclusiveness, even in natural scenery. Nature made the lakes and the surrounding rocks and mountains in all their rudeness, as she made the crab and the sloe: from these man has produced the golden pippin and the green-gage plum; and why should not the same spirit of improvement be directed towards those parts of Cumberland and Westmoreland which, relatively to man, are as wild as the crab or the sloe? All objects and things ought to be judged of with reference to the whole of human nature, and not with reference only to some particular part of it.

The Climate, proceeding northwards as far as Manchester, becomes gradually colder; but from Manchester to Liverpool the temperature is somewhat increased, owing to the vicinity of the sea. In proportion as we approach the sea, the quantity of rain which falls increases; and hence the production of bogs in Lancashire, Cumberland, and Dumfriesshire, in situations where the natural drainage was defective. At the same time, the soil along the sea coast, from Chester to Dumfries, and as far in the interior as the land continues flat, being generally sandy, is well adapted for a wet climate; and those parts of it which are now covered with peat bog, when drained, will be as well fittted for agriculture as the rest. The climate in the lake district is cold and moist, and the soil retentive; that country is therefore better adapted for pasture and woodlands than for aration.

The weather during July has been remarkably warm, with frequent showers; and on the whole the agricultural crops and woods never looked better. The crops of fruit, however, are generally defective, though we believe they are better in the neighbourhood of Manchester and Chester than they are either farther north or farther south. On the 15th of July a dreadful hailstorm happened at Penruddock, about six miles from Penrith, on the road between that town and Keswick. It extended over a tract of country nearly two miles in diameter, totally destroying the field crops, and killing many of the birds, hares, rabbits, and poultry. The hares took shelter in the same shed with men and cattle. The leaves of the large *T*ussilàgo, by the roadside, and those of all the crops in the cottage gardens were cut into shreds; the potato leaves and stems were lacerated, and every stalk of corn was broken. Two extensive farmers lost every thing but their cattle. The storm began in darkness, about four o'clock in the afternoon, and continued nearly two hours; the hailstones which fell were from 4 to 6 in. round; they formed a body in many places from 15 to 18 in. deep; and lay on the ground three days before they were all melted.

The Plants in the red sandstone have been nearly the same from Banbury to Dumfries: the only changes have resulted from difference in elevation, or in the degree of moisture; some changes, but not many, may have been the result of difference in temperature. The plants on the schistus, in the lake district, like those on the calcareous hills of Derbyshire, are much more various than on the sandstone plains; but we have not had leisure to examine the hilly districts with sufficient minuteness to state which plants are peculiar to lime and which to schistus. We suspect, however, that the species limited, or absolute to each will be found very few. Elevation, moisture, and temperature have much more influence on native vegetation than soil. The unity of the flora of the roadsides the whole way from London to Dumfries is beautifully preserved by the bramble and the common polypodiums. These last are very numerous in the neighbourhood of Birmingham, on the coarse sand; and equally so among the lakes between Newby Bridge and Keswick, on the soft compact clay. In shady situations, for example, about Levens, near Milnthorpe, and on the east side of Windermere, where the road passes Storr's, the *P*olypòdium vulgàre has established itself on the trunks and branches of even healthy vigorous-growing trees, in a manner quite remarkable, and which reminds us of the descriptions given by travellers of the epiphytes in the forests of Demerara and South America. Some sycamores and limes, by the side of the public road at Levens, have their trunks and branches thickly covered with long black moss, in which this fern flourishes most luxuriantly; and a fine oak in the garden of the poet Wordsworth, at Rhydal Mount, is similarly clothed, though not to the same extent. In the drier districts of England this polypodium confines itself to the decaying trunks of old pollards. The wild strawberry is very common on old banks on the sandstone, and also on the clay, and it has grown and spread so vigorously in the neighbourhood of Bowness, and on the banks of the Esk between Longtown and Langholme, as to form on the stone fences strawberry walls, like those of Mr. Byers (Vol. V. p. 437.), in both places. Other walls at Levens, and among the lakes, are completely covered with ferns, which spring from every joint, and from the turf coping. Part of the park fence at Rhydal Hall affords an example.

As the white stellaria accompanied us from London to Manchester, so the blue campanula took us up there, and has travelled with us to Dumfries. Not that the stellaria had deserted us, or that the campanula was not in the hedges all the way from London, but that each plant was only conspicuous when in flower. Between Liverpool and Lancaster the flowers of the common ragwort began to make their appearance, and have since become more conspicuous by hedge sides and in pasture fields, than it would be for the credit of the Cumberland and Dumfriesshire farmers to mention. Between High Hesketh and Wetherall the dwarf whin abounds, and is coming into flower, with masses of purple heath, the above yellow ragwort, purple foxglove, and, in the hedges, as high as their tops, *Gàlium uliginòsum*. The ash and a broad-leaved elm seem to be indigenous alike in Dove Dale on the lime, about Alton Towers on the sand, and among the lakes on the clay. The same may be said of the oak, the hazel, the thorn, the holly, and the yew. The holly was formerly so abundant about the lakes, that birdlime was made from it in large quantities, and shipped to the East Indies for destroying insects. It is still equally abundant in what remains of Needwood Forest, on the sand, in Staffordshire. We merely mention these things to show that the larger indigenous vegetables are not very exclusive in their choice of soils, whatever they may be with regard to elevation of surface, moisture, or temperature. Grasses we believe to be much more particular as to soil; but ferns and other Cryptogàmia seem to be guided in their choice entirely by moisture and climate.

Respecting indigenous Animals we shall say nothing here, as we have been promised detailed accounts of the natural history of Birmingham, Manchester, Preston, and Dumfries, and their respective neighbourhoods, which will hereafter appear in the details of our tour. We may, however, shortly notice the condition of the animal man in different districts of the country through which we have passed. He appears to us decidedly in the lowest state in the agricultural district between Banbury and London; and as decidedly in the highest state in Birmingham and the other iron-manufacturing towns in its vicinity. There the workman is more on a level with his employer, in point of intelligence, than he is in Manchester or Liverpool; and it is there only that servants cooperate with their masters, on an extensive scale, to obtain a common end. The reason is, the manufactures of Birmingham require a union of skill and ingenuity, combined with physical strength, which the Manchester manufactures do not; and therefore the workmen belonging to the latter town are constantly liable to have the value of their labour reduced by the influx of Irishmen, and other agricultural labourers, who will work for a mere subsistence, and who, whatever may be their age or previous employment, are in a very short time rendered competent to attend upon machinery. This is not the case with the Birmingham workmen, who are obliged to employ several years, and those in an early period of life, to acquire the art of working in metals; but who, having acquired skill in any one metallic manufacture, can easily change from it to another, as the state of the market may require. It is obvious that this gives these workmen not only a command of the market, but also a command of employment, and a certain influence over their employers: the employers, in fact, can no more do without the workmen, than the workmen can without the employers. These circumstances, together with the general prevalence of school education about Birmingham, account for the very superior intelligence of the artisans of that district. The unity of feeling and purpose, in the Birmingham districts, between the masters and the men, will perhaps be better understood, when we state that the greater number of the masters have risen from the condition of workmen. If ever any grand national movement should take place, it will probably be made, and made with effect, by the men of Birmingham.

Man in the hilly and mineral districts of Derbyshire is naturally more active, hardy, and vigilant than in the low and rich manufacturing and agricultural districts, because he has more to contend with; and the same may be said of man amid the mountains of Cumberland and Westmoreland; adding to the character of the people in the latter instances a degree of simplicity and sincerity, from their comparatively slight intercourse with strangers, and the absence of manufactures and commercial pursuits.

Having thus slightly touched on those natural circumstances in the countries passed through, which constitute the foundation of all artificial improvements, we shall adopt a different order from what we did in our last article, and notice general, territorial, social, and domestic improvements, before entering on the condition of country residences, and the state of agriculture, planting, gardening, and gardeners; our retrospective comparisons always having reference to the year 1805, except when otherwise mentioned.

Roads, though they have in many places been materially improved in the line of direction, as well as in the mode of formation, are still lamentably deficient in both. The improvements have chiefly been confined to the main roads, but even these have not been improved to an equal extent in all places, and hills are tolerated in some districts that would not be permitted in others. In certain beautiful tracts of country, which would admit of roads perfectly level, they are carried over hills and through hollows, without regard to natural inequalities; while the same expense, or very little more, would have carried the route round these, and formed a road of the most perfect ease, and, with reference to the display of the surrounding scenery, of the greatest degree of beauty. We may refer to the road from Newby Bridge to Grasmere, and to that from High Hesketh to Wetherall. The country through which the latter road passes has been enclosed since we last saw it, and therefore there can be no sufficient excuse for its present line of direction. In some other places the roads are not only hilly, circuitous, and badly made, but too narrow. As an example, we may refer to the road from Farley to the Ashbourne road, and also to the roads about Grasmere. One of the greatest defects in roadmaking is the manner in which steep hills are ascended or descended, always abruptly proceeding in a direct line up or down, instead of skilfully taking an oblique direction, and so advancing by an easy slope, without reference to its length. For want of attending to this principle, there are some county and parish roads that we could mention, which, if they were described to an enquirer who had never been far from London, would be considered as imaginary. When we descended from the Dog and Partridge public-house, in the neighbourhood of Ashbourne, to Illam in Dove Dale, and saw the splendid Gothic mansion of Illam Hall, lately erected in the bottom, we concluded that we were on a country road, that could not possibly be used as one of the main approaches to the house. On arriving at the entrance lodge, after descending between two and three miles, we were not a little surprised at being informed that the road by which we had come was one of the only two public roads, both equally bad, of which that country could boast. We are not surprised to meet with such roads in a country without gentlemen's seats; but what enjoyment a proprietor can have in setting down a splendid mansion in the midst of such bars to all general improvement, we cannot understand. The first step towards amelioration in a wild country should always be to facilitate the means of communication between one point and another. The roads to, through, and from Dove Dale might, with the greatest ease, and with very little expense, owing to the excellence of the materials every where at hand, be reduced to a slope, which, in the steepest parts, should not exceed two inches in six feet.

The roads of Britain, as it appears to us, ought to be placed on a system of formation and management different from the present. National roads ought to be under the immediate control of government, county roads under the control of counties, and parish roads under the control of parishes. There ought to be one general law applicable to all these roads, determining the maximum degree of slope, their width, and compelling guide-posts to be set up at all junctions or intersections of roads; proper milestones; lamps on the national roads; and giving a power over the surface to a certain extent on each side of the road, so that the hedges and trees bordering it should be kept in a proper state. Government ought to have its board of engineers, and each county and each parish its engineer. Improved lines of road ought to be determined on and laid down in maps; such roads to be executed by degrees as wanted, or during a scarcity of employment for the labouring classes, and to be paid for by parish, county, or national rates, according as they were done for the parish, county, or nation. By having this reserve of the commonest description of labour always ready for the working classes, there could never be any great distress among them; while no money would ever be paid to the able-bodied poor without an equivalent being obtained for it, and the country would be gradually provided, as its wants required, with the very best description of roads.* After such a system as that above-mentioned had been in operation for a few years, hilly tracts, and those remote parts of the country which have now the very worst roads, would have roads as even as those in any gentleman's park, and more delightfully varied. For want of some general system of this kind, much of the money expended during the last twenty years on roads may be considered as little better than thrown away; because an improved system of roadmaking would change many of the lines of direction. It is difficult to estimate the immense benefit which would accrue to a country from having in every part of it level roads, or the nearest approach to them that art could make, formed on the best principles, and kept in the best state of repair. In the most hilly parts of the island, a man who now keeps one horse would immediately be rendered equal, in point of the means of conveyance for either pleasure or profit, to one who now keeps four. Locomotive steam carriages might be used every where, and very probably a species of light carriage would be invented, which might be moved by machinery to be worked by hand from the inside; and in which a party of men, of very humble means, might, by each working the machine in turn, make tours of business or pleasure to those scenes now only accessible to the wealthy. It is delightful to think of a party of London or Birmingham journeymen, with their wives, making a tour, in a hired or joint-stock mechanical carriage, to North or South Wales, or the lakes; and to think of the ease with which all the finest scenery in the island might be seen by every one. The views from the public roads so laid out would combine all the beauties now chiefly sought for in the scenery round gentlemen's seats, and would, indeed, far exceed them; for, independently of the variety of situation of such seats, and of distant prospects seen from them, there is of necessity a great general sameness in their appearance when examined in detail. It is clear to us that there ought not to be any turnpikes on any road whatever; but we have neither time nor room to give our reasons.

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* It appears to us to be one of the first duties of every government to provide the means of subsistence for all the governed: either this is the case, or the government of a country becomes reduced to a mere system of police, whose sole office is to protect the governed from one another, and from foreign aggression. Good roads and safe harbours form the most valuable capital of a country; and so long as these admit of improvement in a fertile country like Britain, it appears to us that the population can never be considered as superfluous, because they may always be beneficially employed.

Railroads we would subject to the same general system as common roads, and indeed include them and canals in that system. A railroad from Dover to John O'Groat's house, with branches to Holyhead, Liverpool, Carlisle, Portpatrick, and Aberdeen, ought unquestionably to be undertaken by government*; while subordinate railroads might be engaged in by counties, parishes, or unions of these. It is clear that the governments of all countries must sooner or later adopt the railroad system of communication from their seats of government to their extreme points, and that ultimately there will be one main railroad through every large continent, and in every large island. There is no insuperable difficulty to prevent a railroad from being laid down from Calais to Pekin; all that is wanting is a generation of civilisation in the more barbarous of the intervening nations, so as to admit of the cooperation of the different governments. We could wish that all of our readers who have not yet been on the Manchester and Liverpool railroad could visit it, in order that they might be inspired with those feelings on this subject which we are certain it is utterly beyond the power of description to convey. As the editor of the *Scotsman* predicted some years ago, it is highly probable that persons not much beyond the middle age may live to go from Edinburgh to London in a summer's day. It has been proved on the Manchester railway, that letters can be conveyed at the rate of upwards of thirty miles an hour; and the heaviest goods at twenty miles an hour.

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* The money might be raised in shares, transferable like canal shares; government taking a number of shares, and guaranteeing to individuals a certain per centage.

It may be alleged that such a power as we contemplate, if delegated to parishes or counties, would be liable to abuse; and to a certain extent this is inevitable, because abuse, like accident, enters more or less into every thing: but if parish and county representatives were elected on an efficient representative system, and all their proceedings conducted in public and published in the local and general newspapers the abuse would be comparatively small; oligarchical vestries and representative vestries are very different bodies, and very different proceedings must be expected from them.

Canals, however important a step they may have formed in the progress of intercommunication, will probably in future be seldom resorted to, with the exception of ship canals communicating with the sea. Many of them in the hilly countries form beautiful ribands of water, admirably adapted for supplying foregrounds to villas. Canals of this description we should be sorry to see destroyed; and all of them, we trust, may long be found useful for local and agricultural purposes, if for no other.

The Towns of Manchester and Liverpool have increased since 1826 to an astonishing extent; and we can only regret that this increase has not taken place according to some regular system. The consequence of the want of such a system is, that one part of the town becomes attended with less advantages in point of salubrity, recreation, and markets, than another; and this in time must occasion a deterioration of the health of the inhabitants of those parts, and finally the depreciation of their property. It appears to us that all towns ought to be governed by a council of representatives, elected by the whole of the householders. Were this the case, the poorer occupiers of houses would have their wants attended to, and we should not find, as at present, almost every thing done with reference only to the rich. In Manchester, not only would gardens and places of recreation be provided in the interior of the town, but the cleanliness of dress and of the interior of houses would no longer be injured by the dark volumes of smoke now issuing from the chimneys of numerous engines, and covering every thing with soot. To the rich, who have for the most part country houses, or who look forward to having them, this is less an evil than to those in middling or poorer circumstances, who have no prospect but that of local and perpetual labour, and therefore they submit to it. In our preceeding article, we suggested a mode by which the soot might be deposited; but on conversing with an eminent engineer and proprietor of extensive engines and consequently smoky chimneys, in Liverpool, he assured us that the whole of the smoke might be consumed with very little additional trouble or expense, were the proprietors of engines compelled to do so. We are perfectly satisfied, from his information, that this might be the case; and that it only remains with the government to remedy this evil, whenever they think proper.

Liverpool is one of the richest corporations in Britain; and no town ever had a better situation for a public garden or breathing place, which might at the same time have contained horticultural, botanical, and zoological gardens, cemeteries, &c. We allude to the rising grounds at Everton. A zone, from the sea on one side to the Mersey on the other, might have included these, and formed a public garden, or rather series of public gardens and promenades, with distant prospects, such as scarcely any other situation in the kingdom could afford. Something of this sort, we are informed, was proposed many years ago by the late Mr. Roscoe, but rejected, and the ground let for building. As, however, nothing can be very permanent in a rapidly increasing commercial town like Liverpool, we hope, when it is subjected to a proper representative system of management, the improvement so long ago suggested may yet be realised. The botanical and horticultural gardens that have been formed by subscription in Liverpool, Manchester, Birmingham, and other towns, for the benefit of the subscribers, would, if town governments had been properly organised, have been formed by them for the good of all. The existence of these gardens, of subscription libraries, institutions, and museums, &c., as the property of a few individuals, however highly creditable to them, is a standing proof of the imperfection of the present town system.

Villages, it is evident, ought to be subject to the same system of government as towns; and every thing proposed by the vestry or council of the one, as of the other, ought to be discussed openly and made public by the press. In a few cases, where villages are the property, or are under the control, of an individual who happens to be benevolent and enlightened, we see what can be made of them. An individual of taste, and of an amiable disposition, who happens to be placed in a village, may, even in the present very imperfect state of things, do much in the way of ornamenting and improving it. We have seen a fine instance of this in the village of Bowness on Windermere. Mrs. Starkey, who has ornamented her own house and ground, situated in that village, with many of the finest plants and shrubs, offers seeds or young plants freely to every villager who will plant and take care of them. Mr. Starkey has purchased some ground and widened the village street where it was narrow, devoting a marginal space to evergreens and flowers, unprotected by any fence. Mrs. Starkey has also planted and carefully trained laurels, box, and holly, against the churchyard wall. In other situations, where laurels would not grow, she has planted ivy; some chimney tops she has ornamented with creepers, and others she has rendered more picturesque by architectural additions. Mrs. Starkey's own house, which is entered directly from the village street, is ornamented by a veranda which extends its whole length. Independently of woody climbers of the finest sorts, which remain on this veranda all the year, pelargoniums, georginas, maurandias, lophospermums, and other similar plants, are planted at the base of the trellised supports, and flower there during the summer, open not only to the gaze, but to the touch, of every passenger. At the opposite side of the street is another piece of trellis-work, as the fence to a flower garden: this trellis, when we saw it, was partially covered with purple and white clematis, sweet peas, nasturtium, calampelis, pelargoniums, and georginas. These hung over into the street in profusion; and the gardener assured us that no person, not even a child, ever touched a flower or a leaf. Mr. Starkey (a Manchester manufacturer) had not yet arrived there for the season, and the house was in consequence shut up; but of this circumstance the villagers took no advantage. In the gardens of this village, and in part also in those of Ambleside and Grasmere, may be seen many of the new potentillas, geums, lupines, clarkia, &c.; and against the walls, kerria, *Cydònia japónica*, China roses of different sorts, clematis, and other climbers are not uncommon. The village of Bowness affords a proof that, when the public are treated with confidence, they will act well in return; and that, notwithstanding what has been said of the rudeness of John Bull, he will, when treated like the French and Germans, become as considerate and polite as they are. It is true, the working inhabitants of London and of manufacturing towns cannot be expected all at once to pay the same respect to flowers as the inhabitants of Bowness; but time will remedy this evil.

The village of Slyne, near Lancaster, is now under a course of amelioration and decoration by Mr. and Mrs. Greene Bradley; and will, we trust, soon admit of comparison with Bowness. The first step in improving a village is to render the houses commodious, and perfectly warm and comfortable; and the next, to increase the gardens attached to them to a profitable size: both these objects Mr. Greene Bradley has already nearly effected.

Labourers' Cottages, in which there was very little improvement from London to Warwick, assumed a somewhat more comfortable aspect about Birmingham, and thence to Manchester. There are still, however, a great many of the inferior cottages of 1805 between Ormskirk and the lakes. There, in the villages at least, they are more picturesque in appearance, and some of the chimney tops would form as fine studies for a cottage architect, as the rocks, ground, natural wood, and waters do for a young landscape-gardener. Between Penrith and Dumfries, the cottages are more improved than they have been on any part of our journey. We are informed that these cottages have been chiefly built by labourers and working tradesmen, for their own occupation. They are of squared stone, with facings to the doors and windows; the floor is raised two or three steps; they contain two rooms and a large light closet, with a garret for lumber, and a lean-to kitchen for washing, &c. The garden is behind, and a peat stack (peat being the usual fuel) is generally placed against the end of the house. The roof is covered with slates; and the windows are generally composed of two sashes, one of which, at least, is hung.

The Condition of the Labouring Classes may be considered perhaps as somewhat better north of Liverpool, than between London and Banbury; partly from their being of a more frugal disposition and more intelligent, and partly also from their resources, in the manufactures of Preston and Carlisle, and their employment as sailors at the seaports. This district seems less a sporting country than those farther south or farther north; and there are, in consequence, fewer persons demoralised by imprisonment for poaching. Nothing in the whole course of our journey has filled us with more profound grief and indignation, than the sight of so many young persons confined in the jails for poaching, commencing with the jail of Aylesbury. We wish the supporters of the game laws could but see, as we have done, the evil they occasion. The time will come, however, and that we trust speedily, when the past existence of such laws will be viewed with astonishment and horror.

Large Public Cemeteries, unconnected with churches, have been formed at Manchester and Liverpool, and ought to be formed on some general system by every town and village throughout the country. That at Manchester and one of those at Liverpool are the property of companies; but the largest one at Liverpool has been formed by the town corporation. This is so far good, because it is in the spirit of what the government of a town ought to do. The cemetery is formed in the bottom and sides of an immense stone quarry; and besides its uses as a cemetery, forms a valuable addition to the public walks of the town. We have only to regret that it has been laid out and planted, and that it is also kept up, in a very commonplace manner, owing, as we were informed, to the want of funds. The situation is certainly singularly grand, and particularly fitted for the purpose of a cemetery; having steep rocky sides, admirably adapted for tiers of vaults (if that antiquated mode of burial should be persisted in for another generation), and a level area of considerable depth of earth for ordinary burial. Our objections to the laying out of this cemetery are, that the dry clumps in the level area do not form a whole with the parts around them, being conspicuously liable to the faults mentioned as common to flower-gardens. (p. 401. figs. 72. and 73.) We should also have preferred more ascending and descending walks in the planted banks; and we think these banks should have comprised in them all the hardy trees and shrubs which do not require peat earth. Along the margin of the walks, at the top and bottom of the banks, we would have placed all the hardy herbaceous plants which do not require peat earth. All the peat earth trees, shrubs, and plants we would have planted in clumps of peat earth in the open area; and we would have named one plant of each species conspicuously, so that every passer by might read it. In regard to keeping, we would have had the gravel walks and the lawn as smooth and as closely shaven as those of any gentleman's pleasure-ground. The corporation of Liverpool is said to have an income of upwards of 150,000*l.* a year; and it does appear surprising to us, that, with such means, and having already expended so much, they should not have been able to finish this cemetery as it ought to be finished, and to keep it up in proper style.

We shall hereafter have something to say of churchyards, and of the tyranny of some proprietors in levelling the graves and even burying the tombstones of the poor; but shall only, at present, notice the churchyard at St. Michael's, at Dumfries, as perhaps the most remarkable in Britain, on account of the number and good taste of its tombstones. The appearance of these at a distance is singularly grand and picturesque. Erecting tombstones here is quite a mania among the middle classes, which has been brought about chiefly by the cheap and easily wrought red freestone, and the talents of the late mason and sculptor Mr. Alexander

Crombie. The cheapness of these tombstones, compared to the price of similar erections about London, is so low, that we are persuaded they might form a profitable article of commerce for the proposed metropolitan cemetery. To enable those concerned to judge how far this may be the case, we give, through the kindness of Walter Newall, Esq., architect, Dumfries, figures from the designs of two monuments, not long since erected at the heads of the graves of two nurserymen, Messrs. Hood, father and son; that of the father (*fig.* 91.) cost 38*l.*, and that of the son William (*fig.* 92.) 25*l.* The carriage to London, by Whitehaven, we are informed, would not amount to 5*l.* for each of these monuments.

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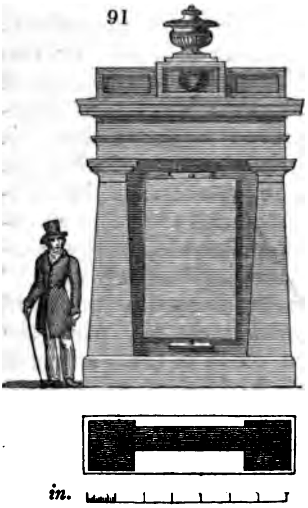
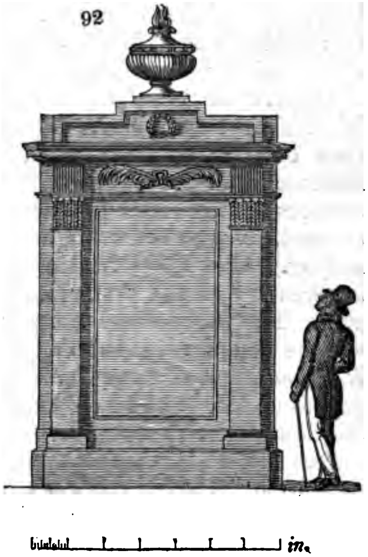


Lancasterian, National, and Infant Schools were scarcely known when we in 1805 passed through the tract of country which has engaged our attention during the last three months. There are now some of each of the three classes in most of the large towns; and Lancasterian or National schools in a number of villages. Infant schools, which are the most valuable of all, are not yet fully understood, and we have seen but comparatively few of them. However, the good that must already have been done by the Lancasterian schools is unquestionably immense; and it gives some foretaste of what will be the consequence of an efficient system of national education when it shall once be established.

92



Mechanics' Institutions are also quite new since 1805, though they are now to be found in most of the large towns. The powerful impulse which established them seems in some places to have subsided; and in Birmingham and in one or two other towns they are said to be falling off. An intelligent lecturer on this subject, in the Birmingham Mechanics' Institution, Mr. W. Pare, has endeavoured to prove that this falling off is owing to a fundamental error in the principles on which they have been established. The promoters of these Institutions, he says, "have virtually excluded the more amusing and attractive branches of human knowledge, by aiming to render them too exclusively and immediately useful." Instead of imparting only such information as was connected with the daily avocations of the working classes, Mr. Pare would endeavour at the same time to excite in them a love of knowledge generally, and the spread of moral refinement. He would endeavour to "awaken the powers of general reflection, and to purify and heighten the moral sensibilities;" to effect, in short, that final object of all education, "the improvement of the moral character and habits, and the diffusion of happiness." * Nothing is more conducive to the happiness of the individual (the means of comfortable existence being first provided for) than the cultivation of the heart and of the affections. To teach man how to pursue this kind of cultivation is one of the most important, though almost wholly neglected, branches of education.

Cooperative Societies are of still more recent origin than Mechanics' Institutions. Their object has been stated more than once in this Magazine. They are decidedly on the increase in all the large towns, and the most important consequences are expected to result from them, by those political economists who seem to have paid much attention to the subject. One thing is clear, that to be a good cooperator it is necessary in the first place to be an intelligent and moral man. The proceedings and prospects of cooperative societies will be found recorded in the *Voice of the People*, *Midland Representative*, *Chester Courant*, and *Carlisle Journal*; newspapers which, in point of sound political intelligence, are of the first order.

Inns and Public-houses ought not to escape observation in a tour to mark the progress of rural and domestic improvement. The latter, as far as we have observed them, appear to have greatly improved, but by no means the former. By turning to our letter from Munich (Vol. IV. p. 497.), an important article will be found stated as wanting to the inns of Bavaria; we were a good deal surprised to find a deficiency, or imperfect forms, of this article in many of both the first and second rate inns. We have elsewhere (Vol. V. p. 545.) recommended Downes, and we again do so, both for private and public houses of every description. The best provisions, the most civil treatment, and the most moderate charges, we have invariably now, as before, found at the commercial inns, though they are most deficient in the above respect. One reason why second-rate inns do not contain a superior description of accommodation is, that they are seldom frequented by families; but as families become poorer, the charges of the first-rate inns will be lowered, or the accommodations of the second-rate inns improved. For public-houses we look forward to very great improvement in every description of accommodation, in consequence of the numerous persons frequenting them improving in worldly circumstances, and becoming more moral and intellectual. We have elsewhere (Vols. V. and VI.) mentioned that almost every public-house in Wurtemberg and other countries in the south of Germany has a music-room, with a piano, and takes in several newspapers. We do not despair of seeing something similar adopted in this country. What is most wanted, both for public-houses and inns, is a large garden for each, to be cultivated by a professed gardener. This would add greatly to the enjoyment of the frequenters of such houses, both as it would afford a place of recreation in summer, and would supply, at all seasons, superior vegetables and fruit. The dissemination of improved vegetables and fruits among the poorer classes would thus be greatly promoted; and we would therefore recommend to all builders of public-houses to join to them a large garden, and to recommend the employment of a professed gardener, and the sale of part of the produce.

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* The Midland Representative, July 9. 1831.

Unenclosed Tracts of Country were common, in 1805, in the route through which we have passed; we may give, as instances, the commons of Harrow Weald, Rickmansworth, Buckingham, Cheadle, and Buxton; Delamere Forest, near Chester; Inglewood Forest, between Penrith and Carlisle; and a considerable tract of country between Annan and Dumfries. All these are now enclosed, and some of them covered with rich crops of grain and thriving plantations; the very poorest surfaces, such as those of Buxton Heath, and Delamere Forest, are now covered with pasture, enclosed by stone walls, or planted with trees. We do not recollect to have seen a single open common between London and Dumfries. The recently enclosed districts are easily recognised by the right lines and right angles of the fields, and the superior condition of the fences, buildings, and roads. Most old enclosures seem to have been more the result of accident than of design; and their crooked hedges and roads, and the irregularity of their farm-houses and cottages, bear the same confused character, and will probably long continue to do so; for it is much easier to lay out a new country than to mend an old one.

Agriculture, we observed in our last, began to assume a somewhat better appearance about Manchester. The culture of the potato there, and throughout Lancashire, is carried to a degree of perfection nearly equal to that of East Lothian. In some places two rows are grown together, at the distance of 14 in., and the space between is 33 in., in Mr. Curwen's manner; in others, and for the greater part, they are grown in single rows, at the distance of 27 in.: the advantage of the former mode is, that coarser implements and deeper stirring may be used in the intervals. In the north of Lancashire, and in Cumberland and Westmoreland, turnips are grown on raised ridgelets, as in the Berwickshire system; and this crop, and that of potatoes, seem to be employed, in most places in those counties, and in Dumfriesshire, as a substitute for naked fallow. Iron swing ploughs, drawn by two horses, are in general use throughout the same tract; but in only one place, the Rig of Gretna, did we meet with a cultivator of an improved construction. Here we saw one founded on Kirkwood's, in the possession of Mr. Carruthers, considerably improved by him, which, he assured us, did with four horses the work of four ploughs, and in a much more efficient manner, because, at the same time, it did the work of harrows and couch rakes. Since he began to use this implement, he never ploughs for his green crops or fallows above twice; once in breaking up from stubble, and once in giving the seed furrow, or making up the drills for receiving the manure for potatoes or turnips. An extensive arable farmer, with this description of implement, can dispense with three fourths of the usual number of ploughs and ploughmen that are requisite when ploughs only are used.

Single-horse carts come into use about Manchester, but among the farmers generally with wooden axles, and with the tiers of the wheels in segments. From Liverpool northwards to Lancaster, a smaller cart and lighter wheels are used; and from Carlisle to Dumfries the one-horse cart, with iron axles, and the tire of one ring. Throughout the northern parts of Lancashire, and in Dumfriesshire, a small hardy breed of horses is used, and short-horned English cattle and *Scotch* Galloways are common.

The culture of moss lands has proceeded but slowly in Lancashire during the last twenty-six years. Adjoining the portion cultivated by the late venerated Mr. Roscoe, as described in our *Encyc. of Agr.*, 2d edit. p. 747., an extensive tract has lately been undertaken by Mr. Reid, whose success has been most complete. Mr. Reid proceeds on the principle, that manure, water, and any description of earthy matter, not deleterious to vegetables, will produce a crop of herbaceous plants. He has accordingly drained, levelled, and cut into small pieces, about 200 acres of the mossy surface; coated it with marly clay, at the rate of 150 cubic yards or tons per acre; and given it, what would be called by farmers, a good coating of putrescent manure. After this treatment in 1829, he planted, in the beginning of 1830, potatoes, which paid 25*l.* per acre, or more than all the expenses incurred. After the potatoes he has an excellent crop of wheat, now on the ground, and estimated at from three to four quarters per acre. On a piece of 50 acres, so treated in 1830, wheat was sown as a first crop, and now appears as if it would produce at least five quarters per acre. Clover and Stickney's rye-grass succeed admirably. It is but doing justice to Mr. Reid, to state that he has conducted all his operations at once in the most scientific and the most economical manner; if encouraged to proceed, he will soon cover the whole moss with verdure, which alone will be an inestimable advantage to the public; but we shall never consider Chat Moss, or any similar collection of peat, permanently and securely subjected to man, till it is so drained by deep cuts in judicious situations, and by time, that the 20 or 30 ft. of spongy moss, on the surface of which Mr. Reid now operates, shall be consolidated to 2 or 3 ft. Our reason is, that the earthy matter applied, being of a different specific gravity from the moss, will gradually sink down into it, till it reaches the bottom. We know that lime on the surface of grass lands on sandy soil will sink into the soil, and after a few years, say seven or ten, be found in a regular stratum, a few inches below the surface. It will continue to sink till it meets with earthy matter of its own specific gravity. Mr. Reid has promised us an accurate account of his operations, which we shall give in a future Number, with the details of our tour; in the mean time it may be useful to observe that he proceeds on the general principles laid down by Steele, in his *Essay on Peat Moss*, which excellent work may be considered as Mr. Reid's text-book.

We could have wished to see the mosses in the north of Lancashire, between Lancaster and Ulverston, and the Solway Moss and others between Longtown and Dumfries, covered with verdure; but we were informed that the two large proprietors to whom Solway Moss belongs, not living in the country, take very little interest in it or the surrounding lands, farther than receiving such rents as they may get. In this case, as in many others, agricultural and general improvement will remain at a stand, till some circumstance shall compel the division and sale of estates now much too large. One of the greatest stimuli that could be given to agricultural and general improvement would be the removal of the law of entail, and the imposition of such a tax on landed and funded property, for the purpose of gradually paying off the national debt, as would compel non-residents, and those who had their estates deeply mortgaged, to bring a portion of them to market. We find this opinion very generally expressed by the middle and poorer classes throughout the country, and more especially in the large towns. The result would be of the greatest service both to commercial and serving gardeners, because the consequent building and planting of farm-houses and villas would occasion a great demand for nursery articles, now a drug in most nurseries, and supply places for many indigent gardeners.

The art of making hay does not seem to be understood in the north of Lancashire or in Dumfriesshire any more now, than it was in most parts of Scotland twenty-six years ago. The hay is put into cocks, which are left in the field till the outside, by alternate rain or dew, and sunshine, is burned to a dusty woody matter, and the interior is rendered too dry to undergo the proper degree of fermentation when put in the rick. Indeed, in Scotland the fermentation of hay in the rick did not use to be considered necessary, any more than the fermentation of the liquid food of pigs before giving it to them, or of liquid manure before applying it to the soil. Yet, though the Middlesex very superior mode of making hay does not appear to be yet prevalent in the north, we observed the bad Middlesex practice of dunging the meadows and grass lands with rotten stable dung, and composts of dung and lime, adopted in the park at Lowther Castle, and at several places near Lancaster. Mr. Ogilvie, an extensive Scotch farmer at Mere, near Knutsford, manures his grass land only with liquid manure, fermented in tanks in the Dutch manner, before being carted out; and this we consider to be by far the best, because by far the most economical, mode of manuring grass lands. The practice of forming compost heaps, by mixing quicklime with putrescent manure, or even with soil containing much vegetable matter, is contrary to all science, as was long ago shown by Lord Meadowbank. The lime is rendered much less fit for acting on the soil of the field, than it was when newly taken from the kiln; and the carbon of the dung, or organised matter in the heap, is rendered insoluble in water, and consequently unfit for being taken up by the roots of plants. A reading farmer who forms such composts, has read to very little purpose.

The best tract of cultivated arable lands appeared to us to lie between Penrith and Longtown, and the worst between Chester and the Mersey. In the latter tract were many fields with crooked ridges, and many pastures overgrown with rushes: and the hedges and roadsides were covered with large thistles and other rampant weeds. Some fields between Liverpool and Preston, were nearly as bad; and, to give an idea of the state of intelligence among the farmers there, we may add, that a landlord told us that he had repeatedly remonstrated with his tenants as to the rushes, but they replied, that the cows preferred rushy fields; and refused to eradicate them. In but few parts have we found the corn crops sufficiently clear of weeds, and certainly not so much so in Cheshire and Lancashire as they generally are about London, in the Lothians, and in Northumberland. The charlock and wild radish are almost every where much more abundant than we expected to find them, and it will be difficult to get rid of the quantity of seeds of these weeds which must be already in the soil, otherwise than by a long course of drill culture both for root and herbage and for corn crops. It was many years ago suggested in the Edinburgh *Farmer's Magazine*, that it would be a good thing for parishes to take cognisance of the weeds that grow on the sides of the public roads, and to eradicate them at the common expense. If parish, county, and national roads were subjected to the system of management which we have suggested (p. 522.), the superintendence of the sides of these roads, together with the fences and the trees, would be included in the system. This is the case in several states on the Continent; and in Flanders, in particular, the authorities order not only the weeds by the roadsides and on public lands to be cut down, but also the leaves of the trees which are infested by caterpillars to be cut off, by the process known there by the French term *echeniller*. If individuals neglect to do these duties at the proper seasons, the parishes do them, and charge the individuals with the expense; and if the parishes neglect them, the districts do it, and charge the parishes. It is clear, at all events, that it would be for the general good in Britain to prevent all troublesome weeds from running to seed, especially such as thistles, docks, ragwort, cow parsnep, hemlock, &c.

At present, in many places, however disposed a farmer may be to keep his lands clear, the dissemination of the roadside thistles, by their downy seeds, renders it impossible for him to do so.

Planting was almost every where carrying on with great activity in 1805, and the beneficial change which it has produced on the face of the country is generally conspicuous. Immense tracts in the neighbourhood of Cheadle, then producing only brown heath and peat, are now covered with vigorous growing plantations of pines, larches, birches, oaks, and other valuable trees. Great part of the waste land known by the name of Delamere Forest is planted with oaks among wild pines, as nurses, and both are thriving exceedingly; the pines being gradually cut in, or thinned out, to give room to the oaks. As far as we saw this government plantation, it appeared to be exceedingly well managed; though we think the idea of government growing its own naval timber, or any part of it, quite unsuitable to the present age, and more calculated to form a nucleus for government jobs, places, and pensions, than to answer any useful purpose. But the most surprising effects of plantations made within the last twenty-six years, have been produced in the neighbourhood of the lakes. We walked or rode through the lake district in 1805, and, having not long before visited Loch Lomond, we were struck with the nakedness of the Westmoreland and Cumberland hill sides; we were not less so this season at their clothed appearance, when we entered the Valley of Windermere by Newby Bridge. This charming effect was continued the whole of the way to Grasmere, and, though suspended for a short distance, reappeared again at Keswick. Near this town, when we first visited it in 1805, the sides of a considerable mountain adjoining Skiddaw had just begun to be enclosed, preparatory to planting. These sides are now clothed with a magnificent mantle of plantation. A conical hill, between Keswick and Penrith, is entirely planted from the base to the summit, and will, in a few years, form a noble ornament to the country for many miles round. The extensive ridge of land on which Penrith Beacon stands, forming a striking feature in the view from Brougham Hall, &c., is also planted over its whole surface; and the Beacon now appears like an ornamental building in the woods of a park.

There is still a great deal to plant on the upper part of the hills of Cumberland and Westmoreland; and the excellent effect of what has been already done ought to encourage the proprietors to proceed with confidence. Difficulties, we understand, occur in many places, from the upper parts of the hills being common land belonging to the villages; and it appears to us that it would be a very desirable thing for the villagers, to exchange their right to the hill tops for an equivalent on the lower part of the hill sides.

With a few exceptions, we cannot say much in favour of the management of plantations. The effects of the old evil of neglecting to thin are almost every where conspicuous. In some parts of the lake plantations, as, for instance, in Professor Wilson's, the trees are so thick as to be suffocating one another. The same may be said of many other plantations, the fear of cutting down trees being a positive disease with most country gentlemen; so much so, indeed, as to make it one of the first points of imitation in which retired tradesmen ape the aristocracy.

As instances of excellent management, we may refer to the plantations of Heath House, planted and managed by our correspondent Agronome, so as at once to produce shelter, ornament, and profit. At Lathom House there are very extensive woods, most scientifically and profitably managed for Lord Skelmersdale by Mr. Lawton, from whom we hope to receive a general outline of his system. Ten or twelve acres are here planted every year on properly prepared soil, which is kept clear by hoeing (never by digging), for three or four years afterwards; and thinning and pruning are commenced as soon as requisite, and carried on regularly. Between two and three thousand pounds' worth of timber is sold from this estate every year. We believe the Duke of Devonshire's and the Earl of Grosvenor's plantations are also very well managed; but, as we expect some account of these from our correspondent Mr. Murphy, we leave the subject for the present. With Mr. Murphy we entirely agree in this, that, where thinning and pruning have been neglected, or pursued on some improper system, it is, in almost every case, the fault of the proprietor, and not of the gardener or forester.

The State of Gardening north of Manchester does not, on the whole, fall off till we arrive at Lancaster; but, from that place to Dumfries, it certainly seems to us not to be so much encouraged as in the other parts of the country which we have passed through. Round Liverpool there are a great many gardens and country seats, but fewer scientific gardeners than we expected to find; a false notion of economy inducing many of the proprietors of villa residences to employ what, about London, are called gardener's labourers. We found very few of these villa residences in any thing like tolerable order. There are, of course, several exceptions; and it is but justice to state that these are in favour of reading gardeners, rendered comfortable by adequate wages and sufficiently good dwellings. Grapes are grown as well in the neighbourhood of Liverpool as they are any where else in England; perhaps better; probably from the greater difficulties which the growers have to contend with. The father of Liverpool grape-growers is Mr. Cunningham of the Liverpool Nursery, who has been a grape-grower in Lancashire for nearly half a century. We have never seen finer grapes exhibited at the London Horticultural Society's meetings, than we saw at Smedley Hall, and other places round Manchester, and at Mr. Roskell's, and other places round Liverpool. The first floral and horticultural society in Lancashire was established at Preston, though it has lately fallen off from want of encouragement. We were surprised to find so few villas in the suburbs of this thriving town; but a projected railway, which will connect it with Manchester and other towns, will infuse new vigour into its manufactures and commerce, and high gardening will then come into use. Mr. Taylor here is a very spirited nurseryman, and gets all the newest things; so that, whenever there is an adequate demand, the supply is ready. Till lately the taste for gardening has been dormant in the neighbourhood of Lancaster; but, since the establishment of flower and fruit shows, some ladies have begun to compete, and this circumstance has directed their attention to floriculture as a science. Carnations and auriculas are admirably grown by Conolly and Sons, and by other nurserymen; and our correspondent Mr. Saul, a man of strong and original intellect, and of great patriotism and disinterestedness, has turned his attention to the introduction of new fruits; and, for this purpose, has established his Pomological Garden, and entered into correspondence with the first nurseries in Britain and America. Gardening is not much encouraged about Carlisle; but it will doubtless receive a stimulus from the improvement which that town and its neighbourhood may expect from the railroad now constructing between Carlisle and Newcastle; and which, it is estimated, will be completed in three or four years from this time. Between Carlisle and Dumfries, there are few opportunities of gardening, from the unfrequency of gentlemen's seats. There is a gardeners' benefit society at Liverpool, which Mr. Rollis informed us is one of the richest, in proportion to the number of subscribers, in the kingdom. Its rules and regulations are about to be confirmed, according to the act of parliament respecting benefit societies; and, when this is done, we are promised a copy for publication. The Walton Nursery library is in a most flourishing condition; and the books are now accessible, at very easy rates, to all who are desirous of perusing them.

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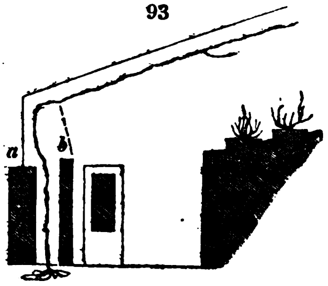

As Points in the Construction of Hot-houses, in the tract under consideration, deserving particular attention, we shall, in the first place, refer to what we have said, in our preceding article, on the subject of wintering vines in pineries (p. 411.), repeating the cut there given (*fig.* 93.), on account of the letters having been wrongly placed; *a* is the front wall and *b* the 4 in. wall within it. The mode adopted in Staffordshire well merits introduction in every part of the country where pines and vines are grown in the same house; indeed, we have seen no plan at all to be compared with it. Where an inner 4 in. wall cannot be adopted, or where there are no upright front sashes, then the next best plan of wintering vines grown in a pinery is, to bring down the shoots, and lay them along the bottom of the sloping glass as close up to it as possible; and then to interpose between them and the air of the house a thick coating of matting or of straw, so as to exclude the heated air on the one side, and to admit the cold temperature of the open air through the glass to the vines on the other. This is done at Croxteth Park, and at many other places, where excellent grapes are grown in pineries; but it is only a make-shift, and not to be adopted in building a house. The mode of heating by hot water we cannot too strongly recommend for adoption every where, notwithstanding the prejudices against it in some quarters, and, among others, in the botanic garden at Liverpool. The most northerly point at which we have yet seen this plan of heating adopted is at Carlton Hall, near Penrith, where Messrs. Walker of St. John Square, Clerkenwell, London, are heating a range of houses, in their very excellent manner, and with perfect success. A much less perfect system is adopted at Lowther Castle; but which system is still found by Mr. Ward, the gardener, to be very superior to smoke flues. We have been rather surprised not to find any curvilinear hot-houses farther north than Dallam Tower. We are very desirous to see that elegant mode of construction introduced among the lakes, and in the border districts (we should like to see specimens at Storrs Hall, and at Mrs. Starkey's), and have strongly recommended gardeners to examine the range of houses erected in the Manchester botanic garden, by Mr. John Jones of Mount Street, Birmingham. We were not surprised to hear the old objections to iron and copper, of rusting and poisoning the plants, and contracting and expanding, and thereby breaking the glass; but we had only to refer to the houses at Woburn Abbey, and other places, where the copper sashes of Mr. Jones have not been painted at all, at any period of their endurance; and where, during the last three winters and summers, not a single pane has been broken by either the frost or the heat. With equal confidence can we refer to the immense iron houses erected by Messrs. Bailey of London, for Mrs. Beaumont, at Britton Hall. We have strongly recommended Mr. Dodd, gardener to Sir James Graham, at Netherby, to adopt metallic curvilinear houses, and hot water, in the erections which are about to be made in the kitchen-garden there; and we trust that he will not forget our recommendation.

As Points of Culture and Management in Hot-houses, we have seen reason for recommending the application of the principle of giving all plants a winter, or period of rest, once a year, at the time when they are, from habit or circumstances, in the most dormant state, instead of keeping them, pine-apples and bulbs more especially, continually growing. The best dormant season for pine plants is during the three winter months, unless for such as are intended to come into fruit, or to ripen their fruit, at that season. The best season for ornamental plants in pots is when they have done flowering, or perfecting their seeds, if they should produce any. We have not time to apply this principle; but a little reflection will convince every thinking gardener that it is one of the most important which can enter into his consideration, for the flowering and consequent fruiting of all plants, and especially of plants in houses or in pots. The great success of the best pine-growers depends materially on the application of this principle; and not less so, the admirable manner in which epiphytes are flowered by Mr. Perrin, gardener to Richard Harrison, Esq., at Oakland Cottage, who is deeply impressed with its importance. Succulents, heaths, and camellias, flowered by other gardeners celebrated for growing these plants, may be referred to as farther illustrations. The practice of high potting in the culture of heaths, and other hair-rooted and wiry-wooded Cape shrubs, was, we believe, first introduced by Mr. Macnab of the Edinburgh botanic garden. It has been adopted with admirable success by Mr. Bow, at Lower Broughton, near Manchester, one of the very best cultivators of heaths in England; it is also practised in the botanic gardens of Manchester and Liverpool; and it is one of those improvements so unquestionably advantageous, that there can be no excuse for not adopting it every where, but that of never having heard of it. The rationale of the practice is, that moisture, being retained round the base of the stem, rots it; though constant moisture in or among the fibres is found necessary for the growth of the plant. By potting high, the base of the stem is always above the level of the rim of the pot, and can never, therefore, be inundated with water; while the fibres at the extremity of the base, being below the level of the rim, receive the moisture and retain it. Planting bulbs above the soil, instead of planting them under it, is another practice not yet generally known; but which ought, with many bulbs, to be generally adopted. The reason is, the bulb (we do not speak of some descriptions of tubers) is nothing more than a bud; and, provided the roots have a secure hold of the soil, and the climate be such as not to injure the bulb, it will expand in size, and increase by offsets, better, when not compressed by the soil, than when under its pressure. The roots, also, being nearer the surface, do their office under more favourable circumstances in regard to heat and air, and will, consequently, mature the leaves of the plants sooner. Plants in the open air cannot always be treated exactly in this way; but, by planting them in a raised drill in winter or spring, or earthing them up during winter, the soil may be removed from the bulb when the weather permits, and the advantages will be found in its rapid increase and speedy maturation. This may be easily proved with onions, shallots, hyacinths, tulips, *N*arcíssi, and even *G*ladìoli and *I'*xiæ.

As a Point in the Propagation of Stove Epiphytes, we must not omit to do justice to the merits of the before-named Mr. Perrin. It is known that the mode by which plants of this description increase is by sending out travelling layers, like the common iris, the tare, or the mint. Mr. Perrin, when he wishes to turn every layer into a separate plant, does not cut it off, and remove it into another pot; but merely cuts each layer through, close to where it proceeds from the parent plant, leaving it in that position to benefit from what roots it may have sent into the soil, until it sends up young shoots. By the common practice of taking off the layer immediately after it has been cut, it receives such a check that it remains for months, and sometimes for years, alive, but not in a growing state. The same mode of cutting is also practised by Mr. Perrin, for the purpose of filling his pots regularly with young shoots; epiphytes, like all travelling plants, soon extending, often on one side only, till they reach over the pot, and become unsightly by leaving the centre of the pot comparatively bare. Mr. Perrin's plan, by cutting off the connection between the travelling shoots and the stationary stool, forces the latter to throw up shoots; and thus filling the centre of the pot, as well as its sides, large handsome plants are produced, which hang over the rims equally on every side.

As Points of open-air Culture and Management, we shall in the present article recommend but a few. The first shall be to plant trees less deep than usual, and, in many cases, in a hillock half above the surface, rather than under it. The object, with fruit trees, is to bring the roots more immediately under the influence of the sun and air, and to discourage their descent into the substratum, by which the tree is kept growing beyond the proper season, prevented from ripening its wood, and often infested with canker. The object with forest or ornamental trees in a park, or on a lawn, is partly the same as with fruit trees, but principally to give them a natural appearance; the bases of the stems of all trees which have sprung up from the seed fortuitously being found raised above the surface, and clinging to it by the spreading of the trunk into leading roots, and never, as in artificial planting, rising abruptly from the surface like a column without a base. This seemingly trifling matter, if attended to in transplanting large trees in parks, instead of placing them always on a perfectly level base, and covering all their roots, would convey the idea of natural wood, stability, and even age. This, we think, every close observer of natural wood scenery, capable of analysing the impressions it makes upon him, will allow. A practice which ought to go hand in hand with planting trees on the surface is that of forming fruit tree borders in cold climates, and where the walls are not high, much shallower than is usually done, and never digging or cropping the borders after they are once formed. This practice was strongly recommended by Hitt, half a century ago; but it is very generally neglected, and the excuse, where the parties know better, is, that they cannot spare the borders, they being wanted for the culture of early crops. This may be true, and the evil may be one without a ready remedy; but, if persisted in, it need not be wondered at that trees so treated, whether on walls or espaliers, seldom produce a crop of well-flavoured fruit. In the garden in which we have seen the best crops, both on the walls and on standards (that of C. J. S. Walker, Esq., of Longford, near Manchester), not only the wall borders, but circles of several yards in diameter under the standard trees, were never dug or cropped; but covered with short dung or leaves, and only pointed once a year with a fork, about three inches deep. Much might be said on this subject, if we had time and room.

As Points of Management and Keeping, which we have had to find fault with, more or less, in almost every gentleman's seat we have seen since we left London, we must again recur to the subjects of edges of walks, edges of dug clumps, and the dug surfaces of clumps of shrubs. There are few things more offensive to our eye than the spade marks along the edges of walks and of dug beds or clumps. They ought to be offensive to every eye as well as ours, because these marks constitute lines; and, considered as lines, they are so large as to diminish the apparent size of every other object near them. Their recent appearance, also, in consequence of their being continually fresh cut, is offensive; because it directs attention to the means rather than to the end, and thus prevents the full enjoyment of the scene: just as the scaffolding, if left in front of a newly built house after it was finished, would prevent the full enjoyment of its architectural beauty. In an economical point of view, deep harsh edgings, uncovered with green, are as objectionable as they are in point of beauty; for in spring, in consequence of the alternate rains and frosts of the preceding winter, they will be found to have mouldered down, and rendered the gravel dirty and unsightly. Shallow and covered with a web of grass, neither frost nor rain can have any such effect upon them. We have before given maximums of the depth of edgings in the most dressed scenery; and we shall now add that it is not sufficient that this depth be adhered to, but that the depth, whatever it may be, should be covered with grass close down to the gravel of the walk or earth of the bed. The spade, in short, after the walks and their margins are once properly formed, can never again require to be used, except, perhaps, once a year in the winter time, to cut off any underground stolones of grass which may have found their way from the margin into the gravel of the walk, or the soil of the bed. The grass may always be kept sufficiently short by the verge shears. The first place, after leaving Manchester, where we saw due attention paid to verges, was Hoole House, Lady Broughton's; the next was the Walton nursery, Mr. Skirving's; and the third and fourth, Mrs. Starkey's at Bowness, and Mr. Barber's at Grasmere. In these places the principle was attended to throughout; at Tatton Park, Hootton Hall, Lathom House, Rufford Hall, Storr's Hall, and a few other places, it was attended to, more or less, in different parts of the grounds, but not in all.

In some pleasure-grounds the surface of the gravel is so much lower than the surface of the lawn on both sides, that it may be deemed almost impracticable to raise it to the same level; in these cases, the margins should be gradually sloped down, or rounded off; so as that, at all events, the grass may come close down to the gravel, and there may not appear the least streak of naked soil between it and the grass. Walks through woods are often cut so deep into the soil that they appear more like newly commenced ditches, or hollowed out beds, than walks. The consequence of their surface being below that of the adjoining ground is, that the roots of the trees and shrubs crossing the walk rise up in and disfigure it, while they incommode the passenger, and destroy the essential use of the walk, that of putting him in a state of ease and comfort, so that he may be enabled to bend all his attention to the enjoyment of the scenery around him. To avoid this evil in walks through woods, they ought to be formed above the surface, rather than under it; and, provided the gravel be kept clear of weeds, and smooth, dry, and firm, to a proper width, the margins need never be formally cut at all; but the grass, or whatever may spring up for a few feet or yards on each side of the walk, among the shrubs or trees, may be only mown or clipped; commencing by very close shaving along the sides of the gravel, and diverging into wildness, as the space clipped recedes from it, and as the character of the scenery may require.

It is a common practice in shrubberies and plantations near houses or gardens, for the gardener to continue to dig, or hoe and rake, the surface, for a number of years after the shrubs or trees are planted; even though it can do no good to the trees and shrubs, and though no flowers can grow among them. This, in our opinion, is a great deformity, because digging, hoeing, and raking are only means to an end; and, kept up in ornamental grounds after they cease to be of use in aiding the growth of the trees, they are as bad as keeping up the outline stakes to a road after it is finished. Now, what we have to recommend on this subject is, that, as soon as the trees and bushes are large enough to protect themselves from weeds (which, on an average, will be in about three or four years), the surface around them should cease to be dug, and should be only mown or clipped, either as far from the walk as the eye can reach, or to the distance of a few feet from it; pulling out, from among the bushes, any larger weeds which may appear beyond the space so mown or clipped. Groups, or clumps, on highly kept lawn, unless they contain flowers, or very delicate shrubs, as well as the more hardy kinds, need never be dug above five or six years after being planted; they should then be turfed over in all those parts where the soil would otherwise appear. To allow of this being done at an early period, the more tender under-shrubs, such as *D*áphne *C*neòrum, *E*rìca (different species), *V*accínium, &c., should never be planted with the stronger-growing American shrubs, but kept in beds or borders by themselves, near those parts of the grounds where flowers are cultivated, and where, of course, the beds always require to be dug. A thinking gardener may easily remedy these and other evils, if he will constantly keep in his mind, that digging, hoeing, and raking are only means to an end; and that, in ornamental scenery, in proportion as these operations are conspicuous, they are injurious to the effect to be produced.

It is a common practice with some gardeners to hoe and rake gravel walks, whether they require it for the sake of eradicating the weeds or not. They think it gives a fresh appearance, and is a mark of care and keeping. This is proceeding on the same false taste which directs the digging and hoeing of clumps and beds, and the constant paring of edges. The gravel of a walk or road should, if possible, never be disturbed; because doing so not only interferes with its usefulness, that is, its smoothness and dryness as a walk, but conveys the idea of its being lately made, and consequently unsettled, and without that mellowness and air of perfection which time gives to almost every thing. When walks, therefore, are disturbed by the hoe and rake, they ought immediately to be smoothly rolled, so as to convey the idea of finish, stability, and perfection. Every practice in gardening, from the most trifling to the most extensive, is capable of being tested by some general principle, applicable to every art; and every gardener who intends to place himself in the first rank of his profession should, by reading and reflection, endeavour to make himself master of these principles and of their application. Those who have not leisure to master the principles may, at all events, comprehend the rules derived from them. Rules are practical directions for the application of principles; and though they cannot be laid down in such a way as to apply to every case, yet general precepts may be given, and the gardener who follows them, even though he may not be able to argue upon the principles from which they are derived, will move in a much safer course than one who has no rules to guide him, and who merely does what he sees others do, without knowing the reason why. The following rules may be derived from the principles we have just laid down:—

1. Let no turf-edgings, whether of walks, or of dug beds or turf, be deeper than an inch, unless the walk or bed be of extraordinary width; and let the grass in all cases grow close down over the edge to the surface of the walk or the bed.

2. In all dug beds, clumps, or shrubberies, where flowers will not grow, or where it is not desired to cultivate flowers, cease to dig, hoe, and rake, as soon as the shrubs and trees are strong enough partially to cover the ground; or, in gardener's phrase, to choke the weeds; mowing or clipping the grass, and weeding out the large weeds afterwards, instead of hoeing and raking.

3. Always keep walks and roads as smooth, firm, and dry as possible.

4. All walks through woods, where there is danger of the roots of trees crossing under the walk, and afterwards rising up on it, in consequence of their increasing thickness, should be made upon the surface, and not under it; that is, the gravel should be laid on without previously digging out a foundation or bed for it; means, of course, being taken to insure dryness of foundation and firmness of surface.

5. The lines formed by the edges of walks in woods may always be more or less ragged, or irregular, provided the grass, weeds, or plants be kept quite low and smooth along the margins of the walk, or prevented from falling down on it, and the gravel and the adjoining soil be on the same level.

6. All walks whatever, even in the roughest and wildest scenery, should be led along at easy slopes, and rendered perfectly smooth and easy to walk upon, so that the spectator may never have any occasion to look down, and take heed to his feet, lest he should trip.

With these rules we shall stop for the present, earnestly requesting not only gardeners, but their employers, and every one who is fond of walking in gardens, to make them known by every means in their power, and recommend their adoption. In this the editors of provincial newspapers might materially assist us; and we hereby invite them to disseminate not only what we have said on the subject in this and in our preceding article (p. 404.), but also what we shall add in future articles. Let it never be forgotten that all that we have recommended will be attended with less trouble to the gardener, and less expense to the master, than the present mode of proceeding.

After these general remarks, we come next to a comparative view of the different residences which we have seen, arranging them as before, as palace, mansion, and villa residences, town and cottage gardens, nurseries, &c.

Of Palace Residences we have, since our last, seen only two; Eaton Hall and Lowther Castle. The palace at Eaton Hall, in the exterior, equalled our expectations, and in the interior surpassed them. It is the only palace which we have ever seen where every part of the finishing and furniture was equally excellent, and all in perfect harmony and keeping. With great splendour, there is great chasteness of colouring; and, in consequence, an appearance of comfort and habitableness that one does not expect to meet with under such a gorgeous exterior. Having said this, and added that the kitchen-garden is in perfect order and keeping; its character being that of a kitchen-garden, ornamented with flower-borders, we have said all that we can say in favour of Eaton Hall. As to the grounds; in the first place, the situation forbids all hope of any natural beauty in the park, beyond that of the grouping of trees, and the excellence of the pasture and roads; and, in the next place, a totally wrong character has been attempted in laying out the pleasure-grounds about the house. A dreary even surface, every inch of which is seen from the terrace, has been attempted to be varied by three broad parallel walks, and one cross walk, with beds along their margins. The effect is a degree of sameness, tiresome in proportion to the extent of the scene, and without a single object that can raise ideas of either grandeur or beauty. We speak of this pleasure-ground as we saw it, the beds for the most part overgrown with large coarse shrubs; when these beds were first planted, and were covered with flowers, we have no doubt they looked better, because they would then have a brilliant appearance from their colours; but they are now all sameness, both in colour and form. A much more effective plan of forming a pleasure-ground to such a house, and in such a situation, would have been to have enclosed three or four acres by an architectural Gothic wall, and laid out the interior in a highly enriched geometrical style, corresponding to the house. With such a design a complete effect might have been produced; but, at present, the style adopted being neither an imitation of the natural or free style, nor yet of that which is avowedly artificial or architectural, is unsuccessful with reference to both, without producing any marked character of its own.

The architectural terrace here is well designed, but so far badly executed that it is gravelled instead of being paved; and that piers, pedestals, and other situations, evidently intended to be finished by vases or other architectural ornaments, are left naked, or surmounted by common garden pots, with the most ordinary green-house plants. We could not help being surprised at the incongruity. Were we the Earl of Grosvenor, we should immediately complete this terrace as it ought to be completed; and extend from it eastward, and to the right and left, a highly enriched architectural garden, surrounded by an embattled half-sunk wall, with an accompanying terrace, and connected with the kitchen-garden by a walk. All the rest of the present pleasure-ground, down to the water, we would throw into the park. If we have sufficient leisure, when giving the details of our tour, we will give a plan of the pleasure-ground here as it is, and another as, we feel perfectly confident, it ought to be; on the principle of never attempting any thing by art, that nature has rendered it impossible to do well.

We were rather surprised to find this pleasure-ground in very bad order; the white clover was flowering on the grass; on remarking which to an intelligent young man, Mr. Duff's foreman, he stated that the grass was keeping for the farmer, that article being scarce with him this season. This, the family being in London, we consider to a certain extent a legitimate excuse; but we wonder much that a man of the Earl of Grosvenor's rank and wealth, possessing such a truly magnificent palace as Eaton Hall, should not give orders to have it, at all seasons, in the highest style of keeping of which it is susceptible. Between the highest degree and mediocrity the difference will not amount to more than the work of half a dozen of labourers in the year. The dug clumps were, in general, what gardeners would call foul, and the edgings to the walks as deep and bare as any we have seen; and, as a proof that a good deal has been pared off them every year, we observed a margin of clay between the edging and the gravel.

We should not say so much of these edgings, did we not know Mr. Duff, whom we regret we did not find at home, to be too liberal and enlightened a man to take it amiss; and, to rank too highly in his profession for any thing that we could say to do him the slightest injury. But this very professional eminence on his part renders it the more necessary for us to point out freely what might otherwise be imitated on his authority.

Lowther Castle is placed in a commanding situation, in a noble park, with an extensive prospect from the entrance front, but with no prospect at all, not even of the home grounds from the other. A great error, in our opinion, has been committed in not forming the entrance front on this unfavoured side; so that the first impressions of the grand distant prospect might have been obtained from the windows. Another lamentable fault is, that the whole building is too low, on which account it is totally deficient in dignity; and, though in the castle style of architecture, it has nothing of the air of a castle. At present all the beauties of the park are seen in approaching to the house, and the pleasure-ground contains only one feature, certainly well worth remembering, a grassy terrace, not connected with the house, but one of the finest things of the kind in Britain. The surface of the ground on the garden front is peculiarly unfortunate in sloping towards the house, instead of from it; and yet no pains have been taken to counteract this misfortune, by creating a perfect level, and, beyond, a natural-looking bank of lawn and trees. Something towards a level has been done, but not enough; and it is singular that the space cleared has not been ornamented with flower-beds. An ash tree and a thorn, however, neither of them possessing the least beauty, are left upon it, perched on conical heaps of earth; at once actual deformities, and standing monuments of the diseased feeling, as to trees, of whoever ordered them to be retained. There is a small flower-garden, in a hollow, shaded by high trees, where fine flowers can never grow; and a very bad kitchen-garden, a mile or more from the house. By great skill, however, good crops are produced in it, though the difficulties to be contended with are enough to break the heart of a gardener. To those who do not object to entering a house from the front which has the best view, Lowther Castle may still be made something of by reducing the lawn on the garden front to an apparently perfect level; that is, to a slope from the house of about one foot in a hundred; and then enriching it highly with flower-beds; the warts and their trees being removed, and the ground beyond the sunk fence properly varied. The elevation of the house might be raised by a real or a mock story. We are much gratified in being able to state that here, and at Eaton Hall, the chimney-tops are not disfigured by pots, as at Chatsworth.

Mansion Residences. The house at Tatton Park is finely situated; but the park, though naturally much varied, and containing a fine piece of water seen in the middle of the picture from the garden front, has too many single trees. It is injured, because by this means a sameness of appearance is produced, and there is everywhere a thin sprinkling of trees, instead of broad masses of wood and lawn, broken at their margins, and entering into each other. In short, what landscape-painters call breadth of feature is wanting. In the pleasure-ground the edgings of many of the walks and beds are entirely to our mind; and Mr. Edgerley has followed our suggestions in this Magazine, of confining some of his numerous flower-beds to one natural order; others to one genus; and others to one colour of flower. The kitchen-garden is well managed by Mr. Reynolds, one of the best pine and grape growers in England; and in the hot-houses we found the best crop of grapes over pines which we have seen since leaving London; except those at Trentham and Knowlsley, also over pines, and which were about as good, but not better. In these three cases, and indeed in most others where we have found excellent crops of grapes over pines, the pines have been spurred in, and only one shoot kept under each rafter. At Dunham Massey we found excellent crops of pines, and grapes over them; though here the pines are chiefly fruited in pits. In the pleasure-ground, some of the edgings of the walks and beds approximate to our idea of what they ought to be. The same may be said as to the edgings at Hootton House. The kitchen-gardens at Knowlsley Park have been reformed by Mr. Smith, and most admirable crops of grapes, pines, and peaches, are now in full perfection. Considering the state that these gardens were in when we saw them in 1819, the greatest credit is due to Mr. Smith. At Croxteth Park, the gardens have, in like manner, been reformed by Mr. Balmer, jun., an intelligent, strong-minded, reading young man. His object is late crops, and, in them he has the greatest success. At Lathom House, a considerable part of the edgings are as they ought to be; and, considering that the family were in London when we called, this place was kept in admirable order by Mr. Kidd, to whom we have strongly recommended the hot-water system of heating, and curvilinear houses. The woods and plantations here, we have already mentioned, are managed in a superior style by Mr. Lawton. Rufford Hall is a dull flat place, but part of the edgings and other things, which will be mentioned in the details of our tour, are to our taste.

Leven's Hall has a curious old walled garden, part of which is preserved in the style of James I., by whose gardener it was laid out. We do not approve, however, of introducing georginas and other modern plants in this genuine specimen of garden antiquities. Mr. Forbes, the gardener here, is the author of *Short Hints on Ornamental Gardening*, which we shall elsewhere notice. At Storrs Hall, the edgings in the flower-garden and in part of the pleasure-ground are to our mind; and the kitchen-garden is excellently managed by Mr. Higham, a pupil of Mr. Forest's. Brougham Hall has little to recommend it but the name. The situation on the brink of a bank which had formerly been washed by the river Eamont, near its junction with the

Lowther, is fine; but the place, at present, in consequence of the numerous alterations going on, is in a state of confusion. Carlton Hall might easily be made something of. The hot-houses, improperly placed in the middle of the garden, are rearranged in a superior manner, under the direction of Mr. Lauder, an intelligent young man, a master of his profession, and are heated, as before mentioned, by hot water. The park at Netherby is too much crowded with single trees in front of the house; but the kitchen-garden is renovating by Mr. Dodd. The chimneys of the mansion are raised in architectural forms, to supersede the necessity of chimney-pots; an improvement which we heartily recommend.

The faults of mansion residences between Manchester and Dumfries are of the same general character as those mentioned (p. 397—399.) as belonging to those between Manchester and London: — the entrance on the wrong side; an attempt at extensive pleasure-ground; too many single trees; coarse edgings; and general want of order and keeping. These evils, we think, have increased rather than diminished, as we have advanced; with the single exception of the edges of walks and roads, which, in a few places before enumerated, are partially what we think they ought to be.

Villa Residences. We have found a few of these very perfect; viz. Hoole House, Lady Broughton's; the villa of Mr. Barber, at Grasmere; Mrs. Starkey's villa, at Bowness; the poet Wordsworth's, at Rhydal; and the garden of Mr. Tong's cottage, near Garstang. We regret the want of room to describe these places. Lady Broughton's is chiefly celebrated for a lawn, varied by flower-beds, and terminating in rockwork, in imitation of Swiss glaciers. This rockwork contains one of the best collections of alpines in Britain; admirably managed by the gardener, Mr. Welsby, who has promised us a list of them. The margins of the beds and of the walks at this place are exactly as we could wish them. The cottage and grounds of Mr. Barber of Grasmere are decidedly the most perfect things of the kind we have ever seen: notwithstanding the greatest temptation to indulge in extravagant fancies, nothing of the kind is to be found; and one wonders how it happens that the whole has escaped the common fate of even the finest places, viz. that of having some part incongruous with the rest. Mrs. Starkey's villa, at Bowness, is perfection's self, as far as it goes; for, though the area of the grounds is not much larger than that of the magnificent library at Eaton Hall, they contain more beauty and variety than the whole of the hundred acres of pleasure-ground at that great dull place. Rhydal Mount is a pastoral cottage, many of the walks being of turf. There is a terrace walk, with some scraps of natural rockwork planted by art; and displaying at the same time the taste of the painter in the arrangement of the colours, and the science of the botanist in choosing the plants. Mr. Tong's flower-garden, at Falcon Cottage, is formed in the bottom and on the sides of an old gravel pit or quarry; and is one of the most successful productions of the kind that we have ever seen. It is close by the public road, and, coming on it unexpectedly (for which pleasure we have to thank Mr. Taylor, the nurseryman at Preston), it struck us with admiration and delight. The first object that met our eye in the foreground was a cone, 10 or 12 ft. in diameter, and 6 or 8 ft. high, of Potentílla formòsa; and the next, high up in the rocky bank, a mass, covering several square yards, of the dwarf white Campánula. To the right and left were masses of beautiful and rare flowers in blossom. The gate was ajar, though there was no person belonging to the garden in it; for here there is no dread of the public; and we walked in, sending a message to Mr. Tong. In threading our way through the intricacies of this enchanted garden, we found it planted with shrubs and plants for spring and autumn in such a manner as to render it gay all the year. Every new and rare plant which has been recommended in this Magazine is to be found here; and, what is most remarkable of all, Mr. Tong, who is chiefly his own gardener, and a good botanist, told us, that, three years ago, he knew only about half a dozen of the commonest flowers.

In the Park, near Liverpool, we found a fine exemplification of the practicability of establishing colonies of villas, all aiding the effect of each other. Those here are all connected by one common walk to the banks of the Mersey, independently of having separate carriage entrances from the public roads. The possessors of one set of these villas are five individuals of the family of Yates.

The villa of Edward Cropper, Esq., and that of Edward Roscoe, Esq., have much merit. The garden of the latter contains all the flowers figured in Mrs. Roscoe's elegant periodical. But the most romantic villa in the neighbourhood of Liverpool is that of Otterspool, which is, at the same time, tolerably well kept. Oakland Cottage is justly celebrated for the perfection with which the gardener, Mr. Perrin, grows orchideous epiphytes and hot-house bulbs; Mr. Harrison limiting his hot-houses to the cultivation of these two classes of plants, because they flower chiefly in the winter season, when the open air furnishes little or nothing in the way of floral productions. The gardener at Mossly

Hill, whose name we regret to have omitted to take down, is aware of the importance of not cropping his fruit tree borders; and the same may be said as to the gardener at Green Bank, James Lawton, who is a good botanist, and has discovered a new species of fern. At Gatacre, the most abundant and early crops of grapes are raised by Mr. Roskell, and sometimes sent to the London market. Here, a pit of stones is heated by steam, in Mr. Hay's manner, with perfect success. On the whole, however, we were disappointed in the keeping of the villa gardens in the neighbourhood of Liverpool; and we did not expect to find, in that liberal and enlightened town, the degree of parsimony towards gardeners which we were given to understand generally exists.

The grounds at Slyne House, R. Greene Bradley, Esq., are beautifully situated and perfectly kept, as much so as those at Whitmore Lodge, but, like them, the edgings of the walks are much too harsh; an evil which in both cases is already, or will soon be, remedied. An incipient taste for plants has been created at Halton Hall, in this neighbourhood, and Miss Bradshaw is pursuing it with the greatest vigour and skill. The same may be said with respect to Halton Rectory and the garden of Miss Dalton; the latter of which, however, we did not see. Dallam Tower is spoiled by the entrance to the house being on the wrong side, and masses of trees are wanted on the knolls in the park, and groups of trees and stones by the margin of the river. Elleray, the villa of Professor Wilson, is placed on perhaps the most commanding situation on the banks of Windermere; but the effect to the stranger is spoiled by the display of all the beauties of that situation before entering the house, in consequence of its being approached on the wrong side. Though there are scarcely any dug beds or flowers about the house, yet the plantations at the entrance-lodge are dug and planted with roses and flowers. (See p. 398, 399. and 544.) Besides this mismanagement as to the approach, the poet, as we have already observed (p. 537.), has the tree disease to an extreme degree.

Woodhouselee, J. Bell, Esq., contains a considerable collection of flowering plants, a recent importation of curious trees and shrubs from Booth of Hamburgh, and remarkably complete farm buildings; but the edgings are bad. The gardener, Alexander Todd, is a scientific man, and has a clean neat house of two rooms without closets, but which requires an addition, as he is now obliged to make use of his bed-room as a dairy. This ought not to be the case, especially where a man has, like Mr. Todd, a family of five or six children. We shall have a good deal to say of this place when giving the details of our tour. Mrs. Maxwell's garden, near Mr. Bell's, contains a very interesting collection of trees and shrubs. The gardener at Woodslee, William Scott, is a strong-minded man, and intelligent in his profession. In this part of the country we first met with the old Scottish and French custom of placing a bed, always the best, in the parlour. We could wish to see the custom done away with, in order that gardeners' houses in Scotland might have comfortable parlours, like those of their brethren in England. We sought in vain, in this neighbourhood, for the late Duchess of Buccleugh's cottage, called the Bower, built on an impending high rock on the banks of the Esk, with a beautiful flower-garden annexed, which we saw about this season in the year 1805; but we were informed by Mr. Bell, on returning from Langholm, that the large sandstone rock on which both the cottage and the garden were placed, and which formed altogether an immense mass, resting on a soft decomposing base, was undermined by a dreadful flood (we believe in 1816), and the whole falling into the water with a tremendous crash was carried down the stream, and totally destroyed. The duchess was never informed of the fate of her favourite Bower, and care was taken to dissuade her from ever coming to visit it.

Of Town Gardens adjoining houses we entered none in Chester or in Lancaster, unless we except that of the jail in the latter place, which was good, though inferior, in point of extent, to that of the jail at Aylesbury. All jails, we think, ought to have large gardens, for the sake of the moral training which they afford. The large garden at the Lancaster Lunatic Asylum is found a source of great benefit to the least afflicted of the inmates of that place. The garden of Charles Horsefald, Esq., at Liverpool is very neat, and has one hot-house already heated by hot water in close pipes, and another about to be so heated in an open channel, to contain water plants and gold fish; but which channel may be covered with tin covers during winter, when the plants are under the water, and when the steam arising from it might render the air too moist. The garden of —— Appleton, Esq., also in Liverpool, contains several hot-houses, very neatly constructed of wood, in the old style, and having excellent crops. The garden of Mr. Thom, at Annan, is laid out in terraces, and is finely situated on the banks of the river; which is, however, nearly hidden by his plantations. The garden contains numerous fruit trees of large size, and also forest trees and shrubs transplanted and supported in the manner described by him (p. 445.), and all of them succeeding completely. Mr. Thom, when speaking of his success in his own garden, we were most happy to find, has kept far within the limits of exaggeration. He has a number of ingenious garden contrivances, of which he has promised us details.

There are some detached town gardens in the neighbourhood of Lancaster like those at Birmingham (noticed p. 409.), and vegetables, gooseberries, and florists' flowers are grown in them to great perfection. We examined those of Mr. John Richardson and Mr. Walmsley. In the garden of each we tasted several varieties of the large Lancashire gooseberries, and we must state, that, contrary to our previous prejudices as to the flavour of these berries being inferior to that of the old ones of smaller size, we were compelled to acknowledge it to be superior. Much depends on growing them in an open airy situation; much on the season; and much also on the kinds, for some are bad, or with little flavour. The sorts we tasted, and found decidedly superior, were the following: —

Reds: Prince Regent, Huntsman, and Top Sawyer.

Yellows: Sovereign, Rockwood's, and Smuggler.

Green: Niger, Greenwood, and No Bribery.

Whites: Whitesmith, Wellington's Glory, and Queen Charlotte.

Mr. Richardson declares that he finds the large gooseberries superior to the small sorts for preserving as well as for eating, and that they take both less boiling and less sugar. We recommend gardeners to cultivate the above sorts at least, and to let us know how far their opinion agrees with Mr. Richardson's and our own. It is but justice to Mr. Saul, to state that he informed us to this effect long ago, as some of his communications will testify. It may be well to grow both large and small sorts, for in cold or wet climates and seasons small-sized fruits are always the best flavoured.

Cottage Gardens. — These rather fall off, in point of ornamental plants, as we advance towards the north; but in Lancashire they are of a good size, and, as we were informed by Mr. Whalley of the Maghull nursery, they contribute materially to the support of the cottager by the potatoes, cabbages, and onions grown in them. About the lakes, the cottage gardens form an exception as to flowers; but from Carlisle to Dumfries they seem to contain very few, and, as we were informed by a gentleman intimately acquainted with this tract of country, when many of the cottages were pulled down and rebuilt by farmers and proprietors some years ago, when farming land was high, the gardens were cruelly diminished, or taken away altogether. This ought not to be tolerated, and we heartily wish that the legislature would interfere in the manner suggested, p. 410.

Nurseries. — The Bache Pool nursery at Chester, Messrs. F. and J. Dickson, and the Walton nursery near Liverpool, Mr. Skirving, are by far the two most complete nurseries of hardy things that we have seen since we left London: indeed, for articles grown in the open air, and for order and neatness, there is no nursery about London which can be at all compared with them. The Bache Pool nursery contains the best collection of rare plants, and the other excels in the style in which the grounds are arranged about Mr. Skirving's house, and in the arrangement and keeping of the whole. There is an approach road to Mr. Skirving's house through turf, trees, and a lawn varied by beds of shrubs and flowers and by rockwork; and the edgings to the walks and beds are entirely to our mind. We recommend them as a study to every gardener about Liverpool, and their inspection to every employer of a gardener in that district, who is ambitious of having his place in the best style of keeping. The general foreman here, Mr. Dall, and the foreman of the houses and botanic ground, Mr. Smith, are most intelligent men, and they perfectly understand our ideas as to the keeping of turf edgings. The other nurseries we must leave to be described hereafter. In the mean time, we have to express our regret at having quitted Preston, Lancaster, and Annan without seeing all the nurseries at those towns. Our having seen only a part will not, we trust, be attributed to any partiality. We have been much gratified to find that the practice is very general among the trade of subscribing to this Magazine, and of lending it out to such gardeners as are their customers. Many are thus enabled to profit from it who would not otherwise see it. The contents of a borrowed book are generally treasured up with more care than those of a purchased one, because the reader knows that he will not have the book to refer to, and therefore must endeavour to remember what it contains.

We have seen no Market-Gardens of any note since writing our last. Many of the private gardens about Manchester and Liverpool send the finer vegetables, and also fruits, to market; and the vegetables sold in large quantities are raised by small farmers in the sandy districts in the neighbourhood of these towns, as at Knutsford, Altringham, Ormskirk, Everton, &c. The mode in which the Altringham carrot is cultivated for seed shall be detailed hereafter.

The Liverpool Botanic Garden is about to be removed to a new site a little farther off; but which, unless the space of twelve acres allotted for it be kept open by placing beside it a horticultural garden and a zoological garden, will soon be liable to the same injury from smoke as the other. We have seen a plan for the new garden, which as it is not understood to be determined upon, we forbear to criticise.

While writing this article, we have received a letter from Mr. Mowbray, curator of the Manchester garden, stating that we have misrepresented the mode of planting that garden when we affirmed (p. 413.) that "the nurses are composed of one common mixture throughout the garden." Such, assuredly, was, and still is, our impression. However, we are very likely in part wrong; which we exceedingly regret, for we have been long proud to call Mr. Mowbray our friend, and there is no man for whose independence of character we have more respect. We insert his letter under the head of Retrospective Criticism, and we invite such as take an interest in the matter to examine the garden, and send us a plan of two or three portions of the plantations referred to in Mr. Mowbray's letter, placing numbers in the plan for the position of each tree, and giving us a list of the names of the trees or shrubs corresponding with the numbers. This will decide the thing at once.

Of Public Promenade Gardens, there is only one small one in Liverpool, St. James's Walk. It is in a fine elevated situation; but, as we have before stated (p. 525.), such a town as Liverpool requires something of this kind upon a very different scale. There are none in the other towns that we passed through. The difference between the Continent and Britain in this respect is most remarkable. The smallest town, both in France and Germany, has its public garden; and all the considerable towns have scientific gardens, combining a botanical arrangement with the plants of horticulture and agriculture.

J. C. L.

Assembly Street, Dumfries, Aug. 4. 1831.

ART. II. *On the Application of the Ammoniacal Liquor of Coal Gas to the Destruction of Insects and Vermin.* By ROBERT MALLET, Jun., Esq.

Sir,

I CANNOT delay sending you an account of a discovery which, I believe, I am the first to make, and which, however simple and unimposing, will, I think, be of considerable value. It is no more than the application of the ammoniacal liquor of the coal gas works to the purpose of destroying insects and vermin in horticultural houses: a matter of the first importance; the expense and difficulty of which has hitherto kept most of our houses in a comparatively filthy state.

Ammonia is well known to be fatal to animals of all kinds; and I find in fruit-houses infested with rats, that, applied to their holes, it is better than any trap; for it either ferrets them out, or kills them in the holes.

I have found that it produces no injury to the most delicate stove or conservatory plants, unless the volume of ammoniacal gas exceeds one fifth of the whole volume of atmospheric air in the house. Succulents will bear any quantity. The gas need not be applied in diffusion through the house more than fifteen minutes, during which time every mealy bug and aphis will drop dead. Nothing but oil or rubbing off will kill the scaly bug, I believe, except this gas, applied directly to the affected part of the plant for a short time, from the tube of a retort or other fit vessel.

The mode of applying it to a house is very simple: — A hole is to be made near the bottom of one of the doors, or other fit place, big enough to let the pipe of a watering-pot through, which is to contain a quantity of the ammoniacal liquor. A small quantity of turf or wood is then to be kindled under it, and the vapour will enter and diffuse itself in the house.

The proper quantity may be easily estimated with sufficient accuracy. First determine the quantity of ammonia the liquor contains, in a given quantity, by the quantity of acid it will neutralise: reference to any chemical system will give the number of cubic feet this will occupy at the atmospheric pressure and at the temperature of the houses; and the cubical contents of the houses being known, use just so much of the liquor as will produce one fifth of those contents. When this quantity is found, the best way is to use only so much, and evaporate it to dryness.*

After the gas has been diffused through the house for about fifteen minutes, the ventilators should be opened to allow it to escape, lest it injure the plants. You will perceive the advantage of this in saving expense in tobacco, time, labour, and trouble. It may be usefully applied to kill moths in clothes presses, &c., and flies when numerous in houses in summer. I am, Sir, yours, &c.

ROBERT MALLET.

94. *Capel Street, Dublin, July* 14. 1831.

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* We shall be much obliged to our correspondent to furnish such details as will enable a gardener, having no chemical system to refer to, to apply the gas with certainty and safety. — *Cond.*

Art. III. *On planting and laying out Grounds.* By M. Hermann Knoop Klynton, Landscape-Gardener, Ghent.

To lay out a garden, or build a house, seems to many people only to require money, and the wish to do so. This is not the case. During my late travels I became acquainted with a young physician, a great botanist; he proposed calling on one of his friends, a very rich man, who lived in the town where our horses were to stop. This friend was engaged in erecting a large house, and laying out immense gardens. I was struck at first sight with great sins committed against the rules of solidity, and I could not prevent myself from asking the proprietor if his architect was present. "Yes, Sir," he replied; "it is myself." I was then silent; and afterwards surveyed the large piece of ground intended for the garden, which I found much varied in itself, being intermixed with beautiful masses of lofty trees, woody and rocky hills, fine large natural meadows, and a stream of clear water. They were surrounding these beauties with high walls. I saw with regret many of the trees destined to be cut down. The doctor asked his friend what he was going to make. "An English garden." "Show us your plan, then." "My plan!" he replied; "it is in my head." We took leave of this rich proprietor, and continued our journey. "What do you think of that man?" says the doctor. "That man," says I, "will spend much money in destroying the natural beauties of his place. He will one day repent of losing his time and money on things which offend the principles of art, and which will be censured by all connoisseurs."

To lay out a pleasure-garden, money and imagination are not sufficient: a knowledge of geometry and drawing is indispensable, either to draw a plan, and to form some idea of the expense, or to transfer from the paper to the ground a plan already arranged. To plant a garden in the picturesque style, which with me is synonymous to planting with taste, requires not only a perfect knowledge of trees, shrubs, and ornamental plants, proper for this style of plantation, but also of landscape-painting, so as to know how to dispose the trees according to their form, size, and colour, in such a manner as to harmonise with the place. In departing from known and established principles, instead of a delightful picture, we run the risk of producing an insignificant, uniform, and cold mixture of verdure.

I am not afraid of repeating here, that to plant as I mean requires extensive information.

The nature of the soil ought particularly to be taken into consideration in the adoption of a general plan; and a knowledge of gardening, as an art of culture, is requisite to insure success. When a thicket of all kinds of trees is wanted, a detailed plan is not so necessary; but even to plant a thicket in imitation of nature, nature must have been previously studied.

I have seen magnificent gardens in England; but some in Germany appeared to me almost as beautiful, particularly in Saxony and Bavaria. I have not forgotten the beautiful villas of Rome, and the fine gardens in Italy; but, in France, Ermenonville, Malmaison, and some others in this style, have made a greater impression on me than the masterpiece at Versailles. Nature is there disfigured by pruning trees to stiff and whimsical forms. In barbarous ages, and to ignorant individuals in the present age, this mutilation gives pleasure, because it shows the power of man: but to highly civilised nations, and to individuals of refined taste, the simplicity of nature is the greatest beauty.

The object of painting and poetry is to represent the finest effects of nature. Picturesque effects in a pleasure-garden consist equally in the choice of the most agreeable forms, the elegance of the outline, the gradation of the perspective, the contrast of light and shade, the projection and relief of objects which strike the sight, the charm of variety and the beautiful harmony of colours, and finally, in that happy and admirable ease which is the distinctive mark of nature and gracefulness.

I have endeavoured to show that the arrangement of a pleasure-garden cannot be the effect of caprice, and that there are rules and principles to be followed, which we cannot neglect without committing the faults which are remarked in many of our gardens in the English style. These kinds of productions may please and suit persons who have not received that education which forms and distinguishes a man of taste. To know how to value and judge what is really beautiful, admirable, and sublime, can only be the fruit of application, and much care and study. These truths are fully demonstrated in the treatises written on the subject by French architects and landscape-gardeners who have become celebrated by their works; amongst others by M. Morel, architect, whose work, in 2 vols. 8vo [*Encyc. of Gard.*, p. 1118.], contains, besides his theory of gardening, a description of Ermenonville; and by M. Curten, architect, whose essay on gardening, in 1 vol. 8vo [*Encyc. of Gard.*, p. 1120.], contains the principles of the art of forming picturesque gardens, and a plan descriptive of an immense park, as an example. Reading these works will convince those who entertain any doubts on the subject, that it is quite impossible to dispense with the principles of art, in forming and laying out gardens which are to be distinguished by good taste.

There are, indeed, people who are easily pleased, and who are so with trifling productions. To value beauty properly, we must understand what it is; we must be able to distinguish it, not only from deformity, but from the negative of beauty, or what some would call common-place forms and combinations. This faculty is in part born with us, or, in other words, in part determined by our organisation; but it is chiefly the result of education, that is, of the observations, reflections, and comparisons made by the individual.

I have frequently observed, in my journeys through Holland, that there was hardly such a thing to be met with in that country as a natural group of trees; and I have, therefore, found that only those persons who are conversant with engravings or paintings of landscapes can see any beauty in these groups. I was called in one day to point out a situation for a summer-house, in the garden of a rich burgomaster in the neighbourhood of Haarlem. I fixed on one under a noble group of an oak, an elm, and two small ash trees. "We must move these ash trees," said my employer; "they are out of all proportion to the oak and to the elm." Such were the ideas of my worthy patron, who, you will easily perceive, was neither a traveller nor conversant with Italian landscapes. What was I to do? I will tell you in my next letter.

Ghent, June, 1831. H. K. K.

(*To be continued.*)

Art. IV. *On the Cultivation of the Cýclamen còum, Bouvárdia triphýlla, and Eránthis hyemàlis.* By Mr. James Housman.

Sir,

Mr. Wilmot's successful culture and strong recommendation of the *Cýclamen pérsicum*, as described in your Vol. I. p. 386., and Vol. II. p. 377., have induced me to pay attention to its no less beautiful congener *Cýclamen còum*; which, in my opinion, deserves to be rescued from that neglect to which its easy propagation and consequent commonness have subjected it. Sow the seeds as soon as ripe, in the month of May, in a wide pan or pot well drained; fine leaf mould is the most suitable; place them on a dry bottom in any shady part of the flower-garden. In October, remove them to a cold frame or pit, where they may be defended from frost; and, though a little heat does not hurt them in this stage of their growth, it is altogether unsuitable when they have arrived at their age of flowering. In twelve months they should be transplanted into pots or large pans, in which they will flower in the month of January following. From the time they are transplanted, keep them in a shady yet airy place, occasionally watered; and about the first of November they may be removed to an open airy part of the green-house to flower. When done flowering, they should not, as is often the case, be thrust away into any by-corner, out of sight; but should have an open situation to perfect their leaves, and be free from injury by frost. This summer and winter management, and but seldom shifting, will keep them in fine flowering condition for many years.

There is another plant to which I would beg to call attention, particularly for its hardiness, and for showing, in the open air, a greater profusion of fine flowers than it ever does in the house; I mean the Bouvárd*ia* triphýlla; which bears frost, and grows as vigorously as the Fúchs*ia* coccínea. Both should be cut down late in the autumn, as from the early spring shoots they produce their finest flowers; and, while so cut down, are much easier defended from frost by leaves or litter, than if suffered to remain uncut. Another very interesting flower, appearing in the most dreary season, should be more generally cultivated; namely, the Eránthis hyemàlis, as it is not only the first harbinger of spring, but gives life to every scene where it appears.

I am, Sir, yours, &c.

June, 1830. J. HOUSMAN.

Remarks on the above. By J. D.

CYCLAMENS. — A more elegant family can scarcely be recommended to the skill and affection of floriculturists: and Mr. Wilmot's lucid and practical communications plainly declare it to be one very susceptible of improvement by art. Will not the species and varieties hybridise readily if artificially cross-impregnated, and thus originate entirely new varieties, even superior to the beautiful kinds already extant?

I was once shown a plant of *C.* pérsicum whose blossoms were very fragrant. It was deemed by its possessor, the Rev. George Reading Leathes (Shropham Hall, Norfolk), a gentleman versed in plants, a rare and peculiar variety. Is it so? Mr. Wilmot, in his excellent articles above referred to, calls *C.* pérsicum a "fine-scented bulb;" and, farther on, directs those who would save seeds to "select" for this purpose "only those plants whose blossoms are scented, some being much more so than others." A fragrant variety of *C.* europæ`um, also, is indicated, in Vol. I. p. 453., as having bloomed with Messrs. Rollison of Tooting; and, in Vol. V. p. 613., a "very delightful and delicate fragrance" is ascribed to the "true *C.* europæ`um," then growing at Mr. Knight's Nursery, Chelsea. Are not the blossoms of most kinds of *Cýclamen* fragrant? Is it generally known that the herbage, and the tuber more especially, of *C.* europæ`um, are intensely acrimonious? The acrimony is at first imperceptible, but palpable enough subsequently. Smith's *English Flora*, vol. i. p. 273., first taught me the fact; and Lindley's excellent *Introduction to the Natural System of Botany*, p. 226., also states that "the root of Cýclamen is famous for its acridity," and further informs us, "Yet this is the principal food of the wild boars of Sicily, whence its common name of Sowbread." This fact reminds me of having observed snails (Hèlix horténsis) to feed on the fiery-flavoured foliage of the Clématis Flámmula, or sweet-scented virgin's bower. Flammula signifies a little flame, and the flavour of the plant is inflammatory enough. Is the acrimony of *Cýclamen* europæ`um, the same in kind and in degree, possessed by every species and variety of *Cýclamen*? It is scarcely in place here to notice the wonderful physiological fact displayed in the peduncles of *C.* europæ`um and other species: they are straight until the flowers are past and the germens are impregnated; after which they become spiral, enclosing the germen in the centre, and, lowering it to the earth, repose on the surface of the soil till the seeds are ready to escape. This beautiful and admirable process is sufficient to suggest to the observant gardener that the seeds of *Cýclamen* require to be sown the moment they are ripe. So do the seeds of most bulbs and tubers.

I will add that I once divided a tuber, on whose crown were several eyes or buds, into four portions: two of these survived, and grew pretty well; but the mode seems not practically useful.

A mode of cultivating *Cýclamen*, so as to procure an abundance of blossoms, is given at p. 483.

Bouvárdia triphýlla. Two very distinct plants are about under this name: one with smooth, glossy, dark green leaves; the other with pubescent foliage, of a paler green. The latter has been published in the *Botanical Register*, t. 107., as Bouvárd*ia* triphýlla var. pubéscens, but has since been distinguished as a species, probably with great propriety, and denominated Bouvárd*ia* Jacquín*ii*. The former, or smooth-leaved kind, remains as B. triphýlla. Both kinds are splendid, perhaps equally so; but I suspect B. Jacquín*ii* is the more floriferous one. Some correspondent is solicited to determine this. Directions for cultivating the bouvardias by cuttings of their roots, and other valuable instructions for the more satisfactory management of them, will be found in pages 48. and 49. of the current volume, transcribed from the *Transactions* of the London Horticultural Society.

Eránthis hyemàlis, the Winter Aconite, merits all the regard Mr. Housman bespeaks for it, as those who have seen it in quantities will attest. I once saw a complete carpet of it beneath a large deciduous tree, whose wide-spread arms, naked when the Eránthis blossoms, while they afforded shelter from early frosts, still admitted the sun's rays between them. The innumerable golden blossoms glittering in the sunshine, and contrasted with the bright green of the herbage on which they were displayed, imparted an impressive and exhilarating effect. This was witnessed about eight years ago at the late residence of the Rev. —— Roper, most probably the parsonage-house, at Abbot's Ripton, near Huntingdon. This gentleman presented some ounces of the seeds, gathered off the above plants, to the botanic garden at Bury St. Edmund's, where also the Eránthis now abounds; but where it is disposed in little clusters at short distances, and alternately with clusters of single and double snowdrops, and about twenty kinds of crocus, along all the fronts and edgings of the numerous borders which, in that garden, are appropriated to the display of ornamental flowers. The numerous knots of yellow supplied by the Eránthis in the sunny days of earliest spring (and some such days are usual) glitter over, and in conjunction with the contrasting colours of the soil, edgings, and walks, checker the whole garden most lovelily. By the time the Eránthis blossoms are passing away, the yellow crocuses are expanding, to continue the variegation of the scene; and I must digress a moment to represent, and I do it from experience of the effect, how inexpressibly splendid it is possible to render a flower-garden in early spring by the copious use of crocuses, by having the clusters numerous and shortly distant from each other, by confining each cluster to one colour and kind, and by composing the approximating clusters of kinds whose respective colours are in strong contrast. On this subject, very valuable, it is hoped, will be found the article on crocuses by Mr. Sabine (p. 41.), transcribed from the *Transactions* of the London Horticultural Society.

Eránthis hyemàlis may be speedily and numerously increased by dividing its tubers, and by sowing its seeds. The tubers should be divided as soon as ever the herbage turns yellow, and planted immediately wherever a want of their enlivening influence may have been felt in the spring preceding. The seeds, which are numerously produced, and usually ripe by the 12th of May, should be gathered as soon as ripe, and sown as soon as gathered. The seedlings will, in the first year, have only cotyledonal leaves; in the second, peltiform ones; in the third, the same, and a few roots will blossom; in the fourth year all will be floriferous. The blossoms of the Eránthis are slightly fragrant.

That most accurate botanist, the late R. A. Salisbury, Esq., who was the first to dissociate this plant from the *H*ellěborus, tells us (*Linn. Trans.*, vol. viii. p. 303.) that Eránthis is from *eraō*, to love, and *anthos*, a flower, and that he means thereby to express the loveliness of such a flower at such a season. His words are, "Floribus tempestate inclementi amabilibus." I mention this to supplant a spurious etymon exhibited in the Conductor's *Hórtus Británnicus*.

ART. V. *On raising Seedling Ranunculuses.*

By the Rev. JOSEPH TYSO.

Sir,

THE paper which I sent you last year on the propagation of ranunculuses, which was inserted in Vol. VI. p. 548., has excited considerable interest among florists, as the numerous letters I have received since amply testify. The article has been copied into Sweet's *Florist's Guide*, accompanied by a figure of one of my seedlings. See plate 170. of that very useful and well executed work, one deserving the support of every florist.

Mr. James Reid of Bousefield has (Vol. VII. p. 121.) made a respectful reference to my plan, as given in Vol. VI. p. 548., saying, "If the system there pointed out were to be generally followed, a most splendid addition might confidently be expected ere long to the present stock, there being no limits to its varieties." But he adds, "Mr. Tyso does not, however, follow up the system to the perfection of which it is capable." This remark is very just, as it relates to my former communication, all improvements being progressive. But I am aiming at perfection, and flatter myself, in this particular, that I am not far from the mark; and, with your permission, I will now communicate what I consider the *ne plus ultra* of the system.

It consists in having some of the best show flowers of each class which produce a pericarpium or seed vessel, namely, dark, white, scarlet, crimson, yellow, striped, yellow-edged, white-edged, spotted, mottled, olive, &c.; and a number of the best semidoubles of each corresponding class, producing anthers as well as pericarps. Then, if a new dark flower is desired, fertilise Naxara, Variat, Quixos, or any good dark flower, with the pollen of a dark semidouble or nearly double flower, containing the best properties as to colour, shape of petals, and general habit. If a superior flower with a yellow ground and dark edging be desired, then fertilise Grand Monarque, Julius, or Grand Berger, with the pollen of a yellow-edged flower of first rate properties. Those that have the greatest number of petals are to be preferred, so that they have anthers producing farina. A similar method must be pursued in order to obtain a superior flower of any other class. The seed generated in this way will certainly produce some fine varieties. Let the parent flowers possess the requisite properties, and there can be no doubt but a part of their offspring will do the same, and some of them in a higher degree of perfection than their renowned progenitors. This I consider the perfection of the system, and I want only one variety to complete it, namely, a good scarlet and yellow-striped, in the way of Mélange des Beautés, producing anthers. If any of your readers possess roots of this character, I should be happy to receive a few from them; and in return I can supply them with any other they may require. If Mr. Reid or any other florist can suggest any improvement upon the above method, I hope he will communicate it to the public through the medium of your highly interesting miscellany.

The cultivation of the tulip, carnation, auricula, and other florists' flowers has been carried to great perfection, while very little has been done to improve the ranunculus, except by Mr. Waterstone of Paisley, and myself. I have raised about fifty superb varieties; for two of which, Leonora and Reform, I have refused twenty pounds. I have several others equally good, which bloomed for the first time this season. They are so superior to many of the old named sorts, that I have thrown into mixtures more than one hundred sorts this year. The old varieties amount to six or seven hundred, but they may, with great propriety, be reduced to two or three hundred, without any real loss.

If florists persevere in raising new varieties, according to the above directions, in a very few years there will not be more than one hundred of the old varieties cultivated under name.

I am, Sir, yours, &c.

JOSEPH TYSO.

Wallingford, July 16. 1831.

Mr. Sweet, in figuring in his *Florist's Guide* the Tiara ranunculus, plate 170., gave from the Gardener's Magazine (Vol. VI. p. 548.) Mr. Tyso's excellent mode of raising new varieties, but added, "In figuring our next ranunculus, we shall give our own remarks on the same subject." Faithful to his promise, Mr. Sweet did so under the Leonora ranunculus, figured at plate 174. These remarks, deeming them valuable, we gave entire in p. 205, 206. of our present volume.

We have seen the Rev. Joseph Tyso's catalogue of ranunculuses, tulips, &c., for 1831, just published; which is printed on a large sheet, and may be had gratis on application, post paid. The roots are on sale for benevolent purposes. We have on a former occasion (Vol. IV. p. 383.) expressed our opinion on the excellency of the plan of this catalogue, which has since been adopted by Messrs. Brown of Slough, and Woollard of Ipswich.—*J. D. for Cond.*

Art. VI. *On the Cultivation of the Ranunculus.*

By Mr. James Reid.

Sir,

The blossom of every plant being single in an uncultivated state, the circumstance of any producing more than the natural number of petals, under the fostering care of man, is chiefly, if not solely, to be attributed to the greater quantity of nourishment afforded them than Nature has provided. To grow double flowers in perfection, therefore, it is obvious that they ought to be supplied with as much of the richest nourishment as they are possibly capable of receiving, provided this can be done without injuring the health of the plant. In the case of the ranunculus, if the necessary quantity of manure be applied without precautions being taken to keep the tubers from coming in contact with it, however well reduced and incorporated with the soil it may be, there is considerable risk of their getting diseased, particularly of being attacked by a small whitish insect that abounds among all richly manured soils. To guard against this, I adopted the following method, which has been found to answer exceedingly well, the bloom produced being such as not easily to be surpassed: — After the roots are lifted, the bed is dug over fully 18 in. deep; the mould all along the surface is then removed to the depth of about 4 in., and its place filled up with a mixture of short horse and cow dung, not more reduced than is necessary to make it fall easily in the working. This is turned very lightly down, barely covering it: it is again turned over in October, and well mixed with the mould, taking care to keep the manure near the surface, as the lower stratum will be sufficiently enriched with what is washed down by the winter rains. It is then raked quite level, and lies in this state till the time of planting, which should be as early in February as possible. The bed will then have sunk down considerably. To meet this, a quantity of rich fresh loam is laid up in autumn under a shed, or where well defended from rain. As much of this dry earth is now spread over it as raises it exactly 2 in. from the intended height. The roots are then placed on the surface in squares of 3½ in. or 4 in. a little sea sand spread over them, and then covered up with dry earth, taking particular care not to bury them deeper than 2 in. from the *bottom* of the tubers. They are thus kept quite separate from the manure, while, by having it so closely under them, they derive as much nourishment as if it had been mixed with the whole soil. This method also combines the advantages of a dry bed and early planting, both of which are so essential to obtaining a fine and general bloom, and which cannot ordinarily be obtained except in such situations as are so very dry as to be unfit for the ranunculus. The temperature of the earth in which they are planted being considerably higher than that of the open ground, from having been kept sheltered and dry, germination will sooner take place, and the risk of injury from frost be also considerably diminished. Nor is the trouble attending this method more in the end than that encountered in the ordinary way. By being partially renewed every year, the bed will never require to be wholly changed, as it is usual, every few years; while the regularity with which such small roots can be placed on the plane surface, besides the general equality in depth obtained, renders it not only greatly superior to drill planting, but the ease with which it is done makes it almost as expeditious.

I cannot conclude without expressing my gratification at the important communication by the Rev. Joseph Tyso, "On the Culture of Seedling Ranunculuses." (Vol. VI. p. 548.)

I am, Sir, yours, &c. JAMES REID.

Bousefield, near Dunfermline, Nov. 8. 1830.

ART. VII. *On the Culture of the Gesnèreæ.*

By Mr. THOMAS APPLEBY.

Sir,

HAVING been pretty successful in cultivating that beautiful family of plants, the Gesnèr*eæ*, I am induced to send you an account of my method of treating them, as it may, perhaps, prove acceptable to some of your readers.

All the species under my care will grow from leaves taken close off by the stem or root stock. I prefer, however, shoots taken off at the second joint from the top, and put into sand under bell or hand glasses, and placed upon a warm flue, and shaded with thin white paper.

As soon as these shoots have emitted roots, I pot them in small pots, in a compost of heath mould, vegetable earth, and perfectly rotten dung, in about equal parts, and unsifted. I then place the plants in the shade for a few days, in a close heat (the back of the tan-pits behind the pine plants will do); and, as soon as they have filled the pots with roots, I shift them into pots, 6 in. wide at top, securing such of the plants as require it with sticks, and then plunge them, the dwarf species at the front of the pine plants, the tall sorts at the ends of the pits.

These plants require, when in full growth, an abundant and regular supply of water. I find great advantage in sprinkling them every day, or, in very hot weather, even twice a day, over the whole herb, either with the syringe or a fine rose watering pan. This seems to be very beneficial to them, as they thrive by this treatment in an uncommon manner.

The Gloxín*ia* maculàta requires a rather different treatment; and, as this is a most magnificent species, it is well worth a little extra-trouble. When the plants have done flowering, which is with me about August, I remove the pots into a cool room, and refrain from watering until the tops die. I then cut off the tops, and in December shake out the roots from the soil, and put every strong root into a pot 6 in. in diameter, and place them in the warmest forcing-house I have, giving but little water until the plants make their appearance, and gradually increasing the water as they advance in growth. By this method I scarcely ever fail of flowering this species in a satisfactory manner. As to the other species of Gesnèr*eæ*, as soon as they have done flowering I gradually decrease the water given to them, until the soil in the pots becomes quite dry. I then treat them similarly to Gloxín*ia* maculàta, except that I do not set them growing so early, usually not till about the beginning of February; and afterwards they are managed exactly as prescribed for the cuttings above, except only that they are put into the full-sized pots at first.

The following is a list of the species we have here: — Gesnèr*ia* bulbòsa*, rùtila, and Douglàs*ii*; Gloxín*ia* maculàta, speciòsa, speciòsa álba, caulèscens, and hirsùta; and Beslèr*ia* coccínea: any of which I should be glad to exchange with any of your readers for species that they may have different from the above.

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* Messrs. Loddiges, in their *Botanical Cabinet* for September, figure, at No. 1724, Gesnèr*ia* bulbòsa, and thus remark on it: — "We understand that the roots, which are tuberous and large, are used as food at Rio Janeiro.

I remain, Sir, yours, &c.

Horsforth Hall, July 12. 1831. THOMAS APPLEBY.

WE commend to the skill and regard of our esteemed correspondent the Treviràn*a* coccínea, Cyríll*a* pulchélla that was. This plant, in its scaly, succulent, tuberous propagines (organs of increase), in its annual herbage, opposite foliage, beauty of blossoms, and their paucity under common culture, assimilates to Gloxín*ia* maculàta, and in some points to other of the Gesnèr*eæ*. One mode of culture, which has produced numerous blossoms, is noticed (p. 605.) in our extracts from the *Horticultural Register*. Another successful mode of cultivating the Gloxín*ia* maculàta is given by Mr. Nelson, Vol. III. p. 141. In that communication the word printed "flowers" should be flower stems. — *J. D.*

ART. VIII. *Description of a new Fruit Tree, the Shephérd*ia *argéntea.* By J. B. RUSSELL, Esq.

Sir,

PERMIT me to introduce to the notice of your readers a beautiful production of North America (which, I think, is but little known to Europeans), called the Missouri Silver Leaf, or Buffalo Berry tree (Shephérd*ia*[*] argéntea). It is also called by the Indians Rabbit Berry, and the Beef Suet tree. The French traders call it Graisse de Buffle, or Buffalo Fat.

Mr. Nuttall, the intelligent curator of the botanic garden at Harvard University, has given the following description of this species: — "Small spinescent trees, with the aspect of *Elæágnus*; leaves entire, covered with silvery scales; flowers small, laterally aggregated; berries diaphanous, scarlet, pleasantly acid; leaves oblong ovate, obtuse, petiolate, on both sides smooth, and covered with peltate scales, which (through a lens) appear ciliated. Male flowers divided to the base, segments sub-ovate, obtuse, externally squamose, like the

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With us it appears to require the stove: it grows to the height of 6 or 7 ft., and flowers in July and August. It may be increased by cuttings, or sometimes by dividing the roots; the soil should be loam and peat." [Heath-mould, see p. 285.]

[*] In honour of Mr. John Shepherd, curator of the botanic garden at *Liverpool.*

leaves; filaments eight, very short, pubescent; anthers oblong, 2-celled. Female flowers smaller, shortly pedunculate, with eight glands; no vestiges of stamina. Style, 1; stigma thick and oblique; germ inferior; berries small, and collected into clusters, red and succulent, sparingly scattered with scales, always more or less acid; seed sub-ovate and shining, much like that of *H*ippóphae, to which this genus is proximately allied. It is indigenous on the banks of the Missouri and the lesser streams, from the confluence of the river Platte to the sources of the Missouri."

This beautiful tree grows spontaneously in the extensive plains on the banks of the Missouri, and resembles the *E*leágnus argéntea so much, that they might be easily mistaken one for the other when not in fruit. The Messrs. Winships, nurserymen, at Brighton, near Boston, I believe, are the only persons who have this tree under cultivation, at least to any great extent. Their standard tree is about 14 ft. high, and is eight years old from the seed. The tree is perfectly hardy, grows vigorously in any part of North America, and is said to bear a near resemblance to the olive tree. It is one of our earliest flowering trees, being covered with blossoms in March.

Its fruit is about the size of the Red Antwerp currant, much richer to the taste, and forms one continued cluster on every branch and twig. We consider it one of the greatest acquisitions of the fruit-bearing kind that has recently been brought into notice in our country; and, for beauty of foliage, elegance of fruit, and general appearance, it is well worthy the attention of cultivators in Europe. Yours, &c.

Boston (*America*), *July* 11. 1831. J. B. Russell.

Shephérd*ia* argéntea is already in the English nurseries and botanic gardens, though still called in some of them *H*ippóphae argéntea: it is prized for the silvery splendour of its foliage, and propagated by layers. With us it seems of slow growth; for, though it was brought to England in 1818, we have never seen a plant of it more than 4 feet in height; allowance, however, must be made both for our limited observation, and for the fact that some plants remain for years after their introduction before they are dispersed. Our native *H*ippóphae *r*hamnöídes is a fruit-bearing species, of which the following account occurs in the *Encyclopædia of Plants*, p. 832.: — " *H. r*hamnöídes is very prolific in berries, which are yellow when ripe, succulent, smooth, and gratefully acid to the taste. They are much eaten by the Tartars; and the fishermen on the Gulf of Bothnia prepare a rob from them which imparts a grateful flavour to fresh fish. Every part of the plant will dye yellow. The species grow in common soil, and are readily increased by layers, or by cuttings of the roots."

To these modes of increase, by seeds should be added, as shown above, and these, if obtained off trees whose blossoms were impregnated by those of contiguous males, would doubtless germinate readily. Smith, in his *English Flora*, vol. iv. p. 238., also says of the *H*ippóphae *r*hamnöìdes: — "Berries somewhat elliptical, orange-coloured, simply but powerfully acid, pleasant enough when preserved with sugar. These berries afford a kind of sauce to the poor in Sweden and the south of France."

But notwithstanding these accounts, in several specimens that we have seen, we have not been so fortunate as to meet with one producing fruit, or that we were told did so. Still, as the trees of *H. r*hamnöìdes grow readily in English gardens, and the species of *H*ippóphae are diœcious, it may be that all our trees of *H. r*hamnöìdes were males, as we know that one of them was. If, therefore, the Shephérd*ia* or *H*ippóphae argéntea can be made to grow as rapidly and readily with us as *H. r*hamnöìdes does, and especially the fruit-bearing sex of it (we have not seen the plants already in England do so at present, be they of which sex they may), it will merit our very best attention.

As means of promoting our success in the adventure, we solicit our American correspondents to tell us the kind of soil in which Shephérd*ia* argéntea is found in its native stations, and that in which it best succeeds when under culture, the degree of moisture most congenial to the plant, and the situations it prefers relatively to shelter, aspect, and other particulars. We also require to know the relative distance at which the trees are planted in America, in order to compute the number requisite to stock any proportion of ground; also the average crop of berries in relation to any quantity of ground occupied by the trees which have yielded that crop; moreover, as the plant is diœcious, what proportion of males should be interspersed among the females to cause them to fructify more certainly and more abundantly.

Besides requesting answers to the preceding queries, we trust that every person who orders plants will insist that some male or barren plants be sent along with the female or fruit-bearing ones; for, independently of the beneficial office the former may effect in fructifying the latter, and in thus providing abundant crops and moreover perfect seeds by which to increase the plant, we think it a shame, in the case of diœcious species, that only one sex should reach us, thus forming as it were but half of the species. This case appears in the

Athenian Poplar (Vol. VI. p. 368.), the Weeping Willow (p. 368.), the Lombardy Poplar (p. 419.), and also in many ligneous and herbaceous plants which occupy a place in our gardens and national catalogues. — *J. D.*

Art. IX. *Description of the Peach Houses and Mode of forcing practised at Buscot Park.* By Mr. John Merrick, Gardener to Pryse Pryse, Esq., M.P., Buscot Park, near Farringdon, Berkshire.

Sir,

There are four peach-houses here, three single ones, and one double one, for forcing peaches and nectarines. The single houses, for such I term them, are very convenient for early forcing; they are 70 ft. long, 6 ft. wide, and 12 ft. high; the top lights are 5 ft. long, and the bottom lights 7 ft. long. The back walls are covered with a trellis, 1 ft. distant at the bottom, and 2 in. distant at the top of the wall. The trees are dwarfs, and planted against the trellis. The flue runs along the front, and is provided with one fire; which plan I find very economical, as not more than three trees come into bearing at a time. The double house is 60 ft. long, 15 ft. wide, 13 ft. high, and 5 ft. in front, with glass, a trellis of half-circles in the middle, and standard trees planted at the back: it is furnished with two fires.

I generally close my first house about the middle of December, and introduce a fire on the 1st of January. I renew the borders every year with loam and dung. I keep very little or no fires in the night during the first fortnight, but maintain a heat of 55° by day; and, as I wish the buds of my trees to unfold, I commence sprinkling them frequently with a small hand-engine, which may be carried about with ease; the temperature of the water being as near as possible to that which rises from the ground, and quite clear. By this treatment, the blossoms expand very vigorously, and become large; which is, of course, of great importance in determining the bulk of the fruit. As soon as the blossoms are fully expanded, and the pollen begins to shed, I again commence sprinkling them very slightly, in imitation of a gentle shower of rain. When the pollen is shed, I continue sprinkling until the fruit is nearly ripe, as it tends to promote its absorption, and I find nearly the whole of my blossoms set most perfectly. When the fruit is of the size of a pea, I keep the heat at 60° or 70° by day, and at about 50° by night, and I never fail then to fill my house abundantly with steam, when there is sufficient heat in the flues, by pouring water upon them from a watering-back and the other to the front of the frame. My practice is, never to stop them until they have extended as far as their confinement will permit; and the laterals from the two vines, as they advance in growth, are trained to the right and left over the bed with neat pegs; and every fruit-blossom, as it expands, is carefully impregnated, and placed upon a tile under the shade of a neighbouring leaf. In a day or two, or as soon as I think the fruit will set, I stop the vine at the first or second joint beyond it. In this way I proceed, setting all the fruit I can, until the surface of the bed is covered with foliage, which is never deranged more than can be avoided. While the fruit is setting I give air very freely, sometimes I draw the lights quite off for a few hours on sunny days; and I also (by applying or withholding heat and water) endeavour to keep them in a state betwixt luxuriance and debility, for in either extreme they will not set well. Having advanced thus far, I commence swelling them off. I begin this with pinching off all the ends of the lateral shoots that have not already been stopped, to assist the young fruit. I now give no more air than will prevent the sun from scorching their foliage. I look over them every morning, and take off all the blossoms as they appear, and stop every young shoot back to one joint above the vine that produced it. I watch over them every afternoon in fine weather; and, before the sun has quite left the frame, I syringe or water them all over, leaves, fruit, and all, and shut down the glasses for the night. I always prefer performing this while the departing rays of the sun have sufficient strength to raise a sweet vaporous heat of about 90°, which serves them to feast upon long after the sun has hid his glories in the west. A few days of such treatment will determine which fruit will take the lead in swelling off, out of which I select two or three to each plant according to the sort, and all the rest I cut away. As the fruit advances in growth, it is necessary at intervals to turn them a little on the tile, to prevent them from growing flat and discolouring on one side, and also from rotting. When they have attained as large a size as I think the sort will admit, I leave off watering, and again give all the air I can by taking the lights entirely off when the weather is favourable; and, if the season is not too far advanced, I leave them to ripen without any other assistance.

For an early crop of melons I grow the small early cantaloup, one plant in a light when the frame is narrow, and two if wide, with two or three fruit on each plant, which in general weigh from 2 to 4 lbs. each. I succeed these with the scarlet and green flesh, planted and trained as above, the produce of which is from 2 to 6 lbs. But my principal crop is from the black rock, which I have grown of all sizes up to 13½ lbs. weight: the plants are much more hardy than many other sorts, it is a good bearer, the fruit is handsome, and the flavour excellent. The sort which I grew so large last year was originally from France, and in its primeval state was a rock; but it has lately been strongly impregnated with the scarlet flesh, which fruit it now resembles in all its characters, except in growing much larger. The largest melon weighed 24½ lbs., and the other 22 lbs.; they both grew upon two laterals produced by the vine, trained to the front of the frame. The mice destroyed a fruit upon the back vine of the size of 5 or 6 lbs. The smallest fruit was sent to the Horticultural Society, and I received a letter of thanks from the secretary: the flavour was said to be excellent, and the other also was described in the same way. This last fruit under the treatment of swelling off, from the time of syringing at night to giving air the next morning, I once in particular noticed, and found it had gained 1½ in. in circumference. The above is my general practice of cultivating the melon, and a practice to which I shall still continue to adhere, unless fully convinced that I can adopt a better,

I am, Sir, yours, &c.

Taplow Lodge, Jan. 15. 1830. J. HOLLAND.

ART. XII. *On cultivating and preserving Ginger.* By ZINGIBER.

Sir,

IN the beginning of March I pot my ginger in small 32s, the compost I use being equal quantities of loam, rotten dung, and leaf mould, well mixed together, but not sifted. As soon as I have potted it, I give a little water to settle the soil, and then place it in a nursery or stove, watering very sparingly until it begins to grow, when it will require a regular supply. About the 1st of May I remove it to a deep pit, previously prepared with about 2 ft. of half-spent tan in the bottom; upon that about 18 in. of the same compost as that in which I potted the roots. I then turn the plants out of the pots, and plant them a foot apart each way, and from 4 ft. to 6 ft. from the glass, giving them a little water immediately, and closing the pit. At the back of the pit my plants have generally attained the height of 6 ft.; and those in the front, for want of space upwards, have bent and sometimes broken their tops against the glass: yet I never perceive the roots any way inferior to those on the back. If these three things — a rich light compost, a high temperature, and an abundant supply of water when the plants are in a growing state — be attended to, they will insure a good crop of ginger.

Very little air is requisite, even in the hottest days of summer. By the middle or end of September the ginger will be ready for taking up. I then divide the roots with a knife, saving the largest races [roots or tubers] for preserving. The small ones, with their tops as little damaged as possible, I pot, and set into the pit again, giving them a little water to settle the soil to their roots. They will only require twice watering after this, until their tops or stems are dead, which will be about the end of October. The pots must be set into some dry shed where the frost cannot reach them. They will require no farther care until the following March, when they must be again brought out, and treated as above directed.

When pits cannot be spared, dig a hole in the open garden, and put a frame over it. If tan be unattainable, leaves and a little long manure mixed will do quite as well.

To preserve Ginger. — Take green ginger, part it neatly with a sharp knife, throw it into a pan of cold water as it is pared, to keep it white. When you have sufficient, boil it till tender, changing the water three times; each time put the ginger into cold water, to take out the heat or spirit of the ginger: when tender, throw it into cold water. For seven pounds of ginger clarify eight pounds of refined sugar; when cold, drain the ginger, and put it in an earthen pan, with enough of the sugar cold to cover it, and let it stand two days: then pour the syrup from the ginger to the remainder of the sugar, boil it some time, and when cold pour it on the ginger again, and set it by three days at least: then take syrup from the ginger, boil it, and put it hot over the ginger. Proceed in this way till you find the sugar has entered the ginger, boiling the syrup, and skimming off the scum that rises each time, until the syrup becomes rich as well as the ginger.

If you put the syrup on hot at first, or if too rich, the ginger will shrink, and not take the sugar.

I am, Sir, yours, &c.

ZINGIBER.

Stratford upon Avon, January 13. 1831.

PART II.

REVIEWS.

Art. I. *A Guide to the Orchard and Kitchen-Garden; or, an Account of the most valuable Fruits and Vegetables cultivated in Great Britain: with Calendars of the Work required in the Orchard and Kitchen-Garden during every Month in the Year.* By George Lindley, C.M.H.S. Edited by John Lindley, F.R.S. &c. &c. Assistant Secretary of the Horticultural Society of London. London, 1831. 8vo. 16s.

In the preface, by the editor, we are informed that "the author has been occupied at intervals, during nearly forty years, in preparing for the press materials for a complete account of the fruit trees and vegetables cultivated in the gardens of Great Britain." The result of "this preparation is now presented to the reader in a form which, it is thought, is so condensed as to comprehend the greatest quantity of information in the smallest compass, and which, at the same time, is sufficiently diffuse to render it possible for the reader to acquire as much knowledge as is either important or indispensable in regard to any particular variety. Those points which are so peculiarly interesting to all gardeners; such as the kind of stock upon which a given variety will succeed better than upon another; the comparative value of each kind of fruit; the aspects that it requires; the different names under which it is known in England and elsewhere; the books in which a faithful figure may be found; the purposes for which it is best adapted; the seasons when it is in the greatest perfection, and topics of a similar kind, have in all cases been treated with especial care."

After observing that there are few men more competent to execute the above task well than Mr. Lindley, "whose long practical experience and ample opportunities of investigating such subjects personally during a series of many years, have been such as have rarely fallen to the lot of any one," we are informed that the forcing department has been entirely omitted, and that only one or two methods of cultivation of each particular article have been introduced, in preference to "a great number of different plans; among which the unskilful reader can never know which to select in preference."

The introduction, which follows the preface, occupies above 20 pages: it is by the editor, and, we will venture to assert, is the most valuable morceau of scientific horticulture which has ever appeared in the English language. In our opinion, it is worth more than all the rest of the book. In the counties the latter will lose much of its usefulness from the want of a sufficient number of synonymes. The editor seems to be aware of this, when he states in the preface that it is "necessary to explain why no mention is made of some sorts which are common in particular districts. In such cases," he says, "it is to be understood that the variety omitted is considered either so like some kind already described, as to be undeserving of particular notice, or so little valuable as to be unworthy of cultivation." This does not appear to us by any means a sufficient reason for omitting to mention sorts common in particular districts by the names in use in those districts; but we can give a reason, and that is, the extreme difficulty of the subject. Between Birmingham and this place (Kilmarnock) we have found in the articles of gooseberries, apples, and pears, the same names applied to so many different sorts; and so many different names, many of which are not in the Horticultural Society's *Catalogue*, applied to the same sorts; that we do not see how it is possible for any individual to give a list of synonymes which shall be complete. The work must be left to a central association, like that of the Horticultural Society. Having said thus much, we have only to add that we believe Mr. Lindley, sen., to have done as much as could be expected from any individual, and more than most individuals are capable of doing; and that we consider his work a most valuable addition to horticultural literature, and wish that it may find its way into the hands of every nurseryman and master gardener.

We shall now give the essence of the valuable introduction before mentioned. Horticultural works contain "plenty of rules for action, but very few reasons." The greatest benefit would be bestowed on the gardening world, if all horticultural practices were reduced to their first principles; the editor proposes "to sketch out, in regard to the fruit-garden, what he thinks the method should be on which a more competent person would do well to proceed."

All our garden fruits are but ameliorated varieties of such as are wild. The amelioration has resulted from human skill, time, and accident; and, being so produced, can only by art be continued. Hence the two great operations for procuring and perpetuating improved varieties of fruits are, amelioration and propagation.

Amelioration " consists either in acquiring new or improved varieties of fruit, or in increasing their good qualities when acquired. . . . There is in all beings a disposition to deviate from their original nature when cultivated, or even in a wild state. But this disposition is so strong in some as to render them particularly well adapted to become subject to domestication: for instance, the dog, the pigeon, and the barn-yard fowl, are cases in which this tendency is most strongly marked in animals; and domesticated fruits are a parallel case in the vegetable world.

" Cultivators increase this disposition chiefly in two ways: either by constantly selecting the finest existing varieties for seed, or by intermixing the pollen and stigma of two varieties for the purpose of procuring something of an intermediate nature. . . . The power of obtaining cross-bred varieties at pleasure has only existed since the discovery of sexes in plants. In selecting seed from the finest existing varieties, we should, moreover, take care to select it from the handsomest, largest, and most perfectly ripened specimens of those varieties: for " a seedling plant will always partake, more or less, of the character of its parent, the qualities of which are concentrated in the embryo when it has arrived at full maturity. . . . Now, if the general qualities of a given variety are concentrated in the embryo under any circumstances, it is reasonable to suppose that they will be most especially concentrated in a seed taken from that part of a tree in which its peculiar good qualities reside in the highest degree. For instance, in the fruit of an apple growing upon a north wall there is a smaller formation of sugar than in the same variety growing on a south wall; and it can be easily understood that the seed of that fruit, which is itself least capable of forming saccharine secretions, will acquire from its parent a less power of the same nature than if it had been formed within a fruit in which the saccharine principle was abundant. It should, therefore, be always an object with a gardener, in selecting a variety to become the parent of a new sort, to stimulate that variety by every means in his power to produce the largest and most fully ripened fruit that it is capable of bearing. The importance of doing this is well known in regard to melons and cucumbers, and also in preserving fugitive varieties of flowers; but it is not generally practised in raising fruit trees."

Cross-bred Varieties. — " The power of procuring intermediate varieties by the intermixture of the pollen and stigma of two different parents is, however, that which most deserves consideration. We all know that hybrid plants are constantly produced in every garden, and that improvements of the most remarkable kind are yearly occurring in consequence." All cases, however, of cross-fertilisation are subject to "a practical consequence of great importance;" namely, that "the new variety will take chiefly after its polliniferous or male parent; and that at the same time it will acquire some of the constitutional peculiarities of its mother." Mr. Sweet's experience (p. 205, 206.) corroborates this position. "The limits within which experiments of this kind must be confined are, however, narrow. It seems that cross-fertilisation will not take place at all, or very rarely, between different species[*], unless these species are nearly related to each other, and that the offspring of the two distinct species is itself sterile, or, if it possesses the power of multiplying itself by seed, its progeny returns back to the state of one or other of its parents.

"Hence it seldom or never has happened that domesticated fruits have had such an origin. We have no varieties raised between the apple and the pear, or the quince and the latter, or the plum and cherry, or the gooseberry and currant. On the other hand, new varieties, obtained by the intermixture of two preexisting varieties, are not less prolific, but, on the contrary, often more so, than either of their parents: witness the numerous sorts of Flemish pears which have been raised by cross-fertilisation from bad bearers within the last twenty years, and which are the most prolific fruit trees with which gardeners are acquainted; witness also Mr. Knight's cherries, raised between the may duke and the graffion, and Coe's golden drop plum, raised from the green gage fertilised by the yellow magnum bonum. It is, therefore, to the intermixture of the most valuable existing varieties of fruit that gardeners should trust for the amelioration of their stock."

Considering varieties, whether those already originated, or others which hereafter may be, in reference to their individual merits or demerits, the editor remarks that the merits of any given variety "may still be either elicited or destroyed by the cultivator." He then proceeds to notice certain methods of improvement. To cause bad bearers to be more prolific, the means are: — " 1. By ringing the bark; 2. By bending branches downwards [see some useful remarks on the mode and effect of this process in our August Number, p. 440.;] 3. By training; and, 4. By the use of different kinds of stocks. All these practices are intended to produce exactly the same effect by different ways. Whatever tends to cause a rapid diffusion of the sap and secretions of any plant, causes also the formation of leaf-buds instead of flower-buds; and, on the contrary, whatever tends to cause an accumulation of sap and secretions has the effect of producing flower-buds in abundance." Ringing, by tending to prevent the return of sap to the part below the ring, also tends to cause the desired accumulation of sap in the part above the ring.

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[*] We suspect the possibility of originating hybrids is scarcely thus limited. Mr. Campbell, gardener to the Comte de Vandes, raised foxgloves from D. ambígua, whose ovula were fertilised by the pollen of Gloxín*ia* speciòsa; and they vary considerably from the mother, and assimilate remotely to the male parent. Potentílla Russell*iàna* is, we believe, an instance of a hybrid whose anthers are sterile; *R*hododéndron Russell*iànum*, of one in which the sexual organs are perfect: so it is stated by Mr. Sweet, in his description of this hybrid, as we have noticed, p. 341.

Bending down the branches effects the same accumulation with more certainty. When branches are in their natural or erect position, the fluids are diffused through their vessels or tissue uninterruptedly and rapidly; but, by bending down the branches, the vessels become more or less compressed, and contribute to the accumulation of the juices or sap, by preventing its rapid diffusion. Training, as branches in this process are usually bent, effects the same object in the same manner; as well as by fixing the branches, and so preventing their being agitated by winds; as this agitation " is known to facilitate the movement of the fluids." " Nor is the influence of the stock of an essentially different nature. In proportion as the scion and the stock approach each other closely in constitution, the less effect is produced by the latter; and, on the contrary, in proportion to the constitutional difference between the stock and the scion is the effect of the former important. Thus, when pears are grafted or budded on the wild species; apples upon crabs, plums upon plums, and peaches upon peaches or almonds, the scion is, in regard to fertility, exactly in the same state as if it had not been grafted at all; while, on the other hand, a great increase of fertility is the result of grafting pears upon quinces, peaches upon plums, apples upon whitethorn, and the like. In the latter cases, the food absorbed from the earth by the root of the stock is communicated slowly and unwillingly to the scion; under no circumstances is the communication between the one and the other as free and perfect as if their natures had been more nearly the same; the sap is impeded in its ascent, and the proper juices are impeded in their descent; whence arises that accumulation of secretion which is sure to be attended by increased fertility."

The editor proceeds to consider "upon what principle the flavour of particular fruits may be improved," and deems all improvements "entirely due to the increased action of the vital functions of leaves." The nature of the stock does not, he argues, at all influence the flavour of the fruit of the scion. "Those who fancy, for instance, that the quince [used as a stock to the pear] communicates some portion of its austerity to the pear, can scarcely have considered the question physiologically, or they would have seen that the whole of the food communicated from the alburnum of the quince to that of the pear is in nearly the same state as when it entered the roots of the former. Whatever elaboration it undergoes must necessarily take place in the foliage of the pear; where, far from the influence of the quince, secretions natural to the variety go on with no more interruption than if the quince formed no part of the system of the individual." The fluid or sap collected by the roots, when elaborated in the leaves, is so modified by the combined action of air, light, and evaporation, as to acquire the peculiar character of the final secretions of the individual from which it is formed. "From these secretions," as discharged by the foliage into the system of the plant, "the fruit has the power of attracting such portions as are necessary for its maturation. Hence it follows, that the more we can increase the peculiar secretions of a plant, the higher will become the quality of its fruits," and *vice versâ.* Pruning and training, and the exposure of branches to the most light in the sunniest aspects, promote the former effect.

The next subject considered is "the mode of multiplying improved varieties of fruit, so as to continue in the progeny exactly the same qualities as existed in the parent." Seeds will not perpetuate a variety undeviatingly; buds will. "A plant is really an animated body, composed of infinite multitudes of systems of life; all indeed, united in a whole, but each having an independent existence. When, therefore, any number of these systems of life is removed, those which remain, as well as those which are separated, will, under fitting circumstances, continue to perform their natural functions as well as if no union between them had ever existed. These systems of life are buds, each having a power of emitting descending fibres in the form of roots, and also of ascending in the form of stem. The first of these buds is the embryo [in a seed]; the others are subsequently formed on the stem emitted by the embryo [in the progress of germination]. As these secondary buds develope, their descending roots combine and form the wood*, their ascending stems give rise again to new buds. These buds are all exactly like each other; they have the same constitution, the same organic structure, and the individuals they are capable of producing are, consequently, all identically the same; allowance, of course, being made for such accidental injuries or alterations as they may sustain during their subsequent growth. It is upon the existence of such a remarkable physiological peculiarity in plants, that propagation entirely depends; an evident proof of which may be seen in this circumstance: — Take a cutting of a vine, consisting of the space which lies between two buds, an internodium as botanists would call the piece, and no art will succeed in ever making it become a new plant, however considerable the size of the internodium may be. But, on the other hand, take the bud of a vine, without any portion of the stem adhering to it, and it will throw out stem and root, and become a new plant immediately." The various modes of artificial propagation, as increasing by eyes, striking from cuttings, laying, budding, and grafting, "all consist in the application of these principles under various forms." Increasing by eyes or buds is illustrated by the above instance of the vine. Striking by cuttings consists in placing a stem bearing more buds than one "in circumstances fitted for the maintenance of life;" and this method has an advantage over propagation by single buds, as "the stem of the cutting forms an important reservoir of nutriment" for the buds it bears, until they can emit roots into the soil by which to cater for themselves. "That bud which is nearest the bottom of the cutting emits its roots" first "into the earth," and "a good operator always takes care that the lower end of his cutting is pared down as close to the base of the bud as may be practicable without actually destroying any part of the bud itself: by this means the first emitted roots, instead of having to find their way downwards between the bark and wood, strike at once into the earth, and become a natural channel by which nutriment is conveyed into the general system of the cutting."

"*Laying* is nothing but striking from cuttings that are still allowed to maintain their connection with the mother plant, by means of a portion, at least, of their stem." Tongueing the layer "has the effect of enabling the roots to be emitted into the soil through the wound more readily than if they had to pierce through the bark."

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* The ingenious theory that every bud has a root or roots, by which it connects itself with, and supports itself from, the soil, is withstood by some physiologists.

Budding and Grafting.—"Budding differs from grafting in this, that a portion of a stem is not made to strike root on another stem; but that, on the contrary, a bud deprived of all trace of the woody part of a stem is introduced beneath the bark of the stock, and there induced to strike root." In performing either operation, the great point to be attended to is, to secure "the exact contact of similar parts." The editor presents numerous valuable remarks on these two processes, but our limits forbid us quoting them.

Transplanting.—The success of this important operation, the writer conceives, may "be proved to depend exclusively upon these two conditions:—1. The preservation of the spongioles of the roots; and, 2. The prevention of excessive evaporation." The spongioles are the extremities of the fibres, and consist of "bundles of vessels surrounded by cellular tissue in a very lax spongy state." Plants absorb all or nearly all of their fluids through these spongioles, and, as the latter are exceedingly delicate in their organisation, their destruction will be effected in exact proportion to the violence or carelessness with which transplantation is performed. "It is because of the security of the spongioles from injury when the earth is undisturbed, that plants reared in pots are transplanted with so much more success than if taken immediately from the soil." As every fibre is terminated by a spongiole, cutting through the roots of large trees, to induce the formation of fibres, the year previous to removing them, contributes to successful transplanting. "When destroyed, the spongioles are often speedily replaced, particularly in orchard trees, provided a slight degree of growth continues to be maintained. This is one of the reasons why trees removed in October succeed better than if transplanted at any other time. The growth of a tree at that season is not quite over; and the first impulse of nature, when the tree finds itself in a new situation, is to create new mouths by which to feed when the season for growing again returns."

Evaporation.—The prodigious evaporation of plants is first attested by quotations from Hales, Guettard, and Knight. A plant of "sunflower perspires seventeen times more than a man. . . . This loss has all to be supplied by the moisture introduced into the system by the spongioles; and hence, if the spongioles are destroyed, and evaporation takes place before they can be replaced, a plant must necessarily die." From this principle arises the impracticability of transplanting deciduous trees when in leaf. Hence, also, "certain evergreens can be transplanted in almost all months [see our extracts from Mr. M'Nab's pamphlet on this subject, p. 78, 79.]: this arises from their perspiration being much less copious than in deciduous trees, wherefore the spongioles have less difficulty in supplying the loss occasioned by it."

"In damp or wet weather this evaporation is least; in hot dry weather it is greatest." Conformably with these conditions, and consistently with the foregoing principle, it is, "that deciduous plants, if taken from the ground in summer, are put into pots and put in a hot-bed to recover; not for the sake of the heat, but because the atmosphere of a hot-bed is so charged with humidity that perspiration cannot go on, so that the vital energies of the plant, instead of being wasted by evaporation, are directed to the formation of new mouths by which to feed." This is a sketch of the scope of the Introduction, which, as we said above, we think a truly valuable article.

The subject matter of the work itself is divided into two alphabets; one for the objects of culture in the fruit-garden, the other for those of the kitchen-garden: in the latter, at p. 551., occurs the notice of the perennial duration of the scarlet runner; to which fact we have previously called attention. (p. 485.)

Art. II. Pýrus Màlus *Brentfordiénsis; or, a concise Description of selected Apples.* By Hugh Ronalds, F.H.S., Nurseryman, Brentford; with a Figure of each Sort drawn from Nature, on Stone, by his Daughter. London, 1831. 4to, with a coloured Figure of each kind of Apple, *5l. 5s.*; with a plain Figure, *4l. 4s.*

We have more than once given notice of the forthcoming of this work, in terms announcing our high anticipations of its excellence. We have not been disappointed, and can assure our readers that the coloured plates which it contains have never been surpassed, and very seldom equalled, in point of fidelity and beauty of execution. Considering this, and the number of apples figured (179), the work is remarkably cheap; and we cordially recommend it as exhibiting the most complete collection extant of delineations of this most useful of British fruits. What adds to the value of the book is, that plants of the whole may be obtained from the author's nursery, and that the fruit may be seen and tasted there during the autumn and winter months; but what is a great blemish is the want of more synonymous names.

The descriptions by Mr. Ronalds are drawn up with accuracy and perspicuity; and Miss Elizabeth Ronalds's part of the work is beyond all praise. We shall give an extract from the Introduction, and a classification of the sorts figured, according to the situations for which they are adapted, as given by Mr. Ronalds at the end of the work: —

> "The sorts will by some be thought too numerous; but it should be considered that many kinds are requisite to insure a constant supply of fruit in every season and at all times, as some of them will every year fail in bearing. There is also some peculiar good quality in each of this selection to recommend it to different tastes, with some singularity of appearance rendering it pleasing to the eye; and there seems no reason why a fancy should not be indulged in apples as well as in tulips, ranunculuses, &c., as they present the greatest and most beautiful variety of any species of fruit, and so eminently combine the useful with the agreeable.
>
> "The descriptions are concise, and designed to point out, in a plain way, the distinct character and qualities of each kind, with the name (encumbered with but few synonymes) by which each variety is most generally known. The figures are of medium size, and the habit of the tree is given with its history, where it is known or is remarkable."

In the following lists we have prefixed a star to those kinds of which we do not perceive a figure in the work; but it should be remarked that the work contains figures of several varieties not enumerated in them. We wish the lists had been reduced one half at least.

A List of the best Sorts of Apples for the Orchard; being chiefly of strong and hardy growth, and sure bearers.

Summer and Autumn Sorts. — Cockpit, *Downton pippin, Duchess of Oldenburgh, Dutch codlin, Franklin's golden pippin, *Gloria mundi, Hawthornden, Kerry pippin, Keswick codlin, Red Quarrénden, Salópian pippin, *St. Julien, Striped juneating, Striped monstrous reinette, White Calville, Wormsley pippin.

Winter Sorts for Orchards. — Beauty of Kent, Bedfordshire foundling, Blenheim orange, Cockle pippin, Court of Wick, Cowarne's queening, *Deeping, Duke of Wellington, Dutch minion [mignonne], Fearn's pippin, Flower of Kent, French crab, *French russet, Golden russet, Green nonpareil, Hanwell souring, Incomparable crab, Kentish broading, Kentish fillbasket, *Kentish pippin, King of pippins, Kirke's Lord Nelson, Large russet, Lemon pippin, Lewis's incomparable, London pippin, Lucombe's seedling, Marmalade pippin, Minshul crab, Newtown pippin, Nonpareil russet, Norfolk beaufin, *Northern reinette, *Pound apple, Ribston pippin, Rymer, Seek no further, Striped Holland pippin, Yorkshire greening.

A copious Selection, to allow of Choice, for an extensive Garden.

Summer and Autumn Dessert. — Aromatic russet, Duchess of Oldenburgh, Early wax apple, Hicks's fancy, Keddlestone pippin, Kerry pippin, La fameuse, Margil, Pomegranate pippin, Red Astrachan, Red Ingestrie, Red Quarrenden, Sack and sugar, Scarlet pearmain, Sops of wine, Striped juneating, Summer oslin, Thorle pippin, White juneating, Wilmot's seedling, Yellow Ingestrie.

Summer and Autumn Kinds of Sauce Apples. — Carlisle codlin, Cockpit, Cole apple, *Downton pippin, Dutch codlin, Early Crofton or peach apple, *Early St. Julien, Emperor Alexander, Gravenstein, Hawthornden, Hollandbury, Keswick codlin, Manks Codlin, *Margate [Margaret ?], Nonsuch, Royal pearmain, Rowe's seedling, Spring Grove codlin, Striped monstrous reinette, Tom Potter, White Calville, Wormsley pippin.

Winter Dessert Sorts for a large Garden. — American plate, Borsdoffer, *Bringewood pippin, Brookes's apple, Christie's golden [?] pippin, Court of Wick, Court pendu plat rougeâtre, Crofton pippin, Dredge's golden pippin, Flat nonpareil, Golden Harvey, Golden pearmain, Golden pippin, Golden Worcester, Green nonpareil, Herefordshire pearmain, Hughes's golden pippin, Isle of Wight golden pippin, Lamb Abbey pearmain, Little beauty, *Motteux's Beachamwell, *New cluster golden pippin, Nonpareil, Nonpareil russet, Padley's royal George, Parry's pearmain, Pomme d'Api, Reinette grise, Robinson's pippin, Russet table pearmain, Scarlet nonpareil, Syke-house russet, *Tulip apple, *Wragley Castle, Wyken pippin.

Winter Sauce Apples for a large Garden. — Alfriston, Backhouse's [Lord] Nelson, Beauty of Kent, Bedfordshire foundling, Blenheim orange, Cockle pippin, Cornish aromatic, Dutch minion [mignonne], Duke of Wellington, Flower of Kent, French crab, *French russet, Golden russet, Hambledon deux ans, Hollandbury, Iron apple, Kentish broading, Kentish fillbasket, King of the pippins, Kirke's Lord Nelson, Lemon pippin, Lewis's incomparable, London pippin, Lucombe's seedling, *Marigold, Marmalade pippin, Minshul crab, Newtown Spitzemberg, Noblesse de Gand, Norfolk beaufin, *Norfolk paradise, *Northern reinette, Pomme d'Api gros, *Pound apple, *Rhode Island greening, Royal russet, Rymer, Somerset lasting, Striped Holland pippin, Yorkshire greening.

An Assortment for smaller Gardens.

Summer and Autumn Sorts. — Cole apple, Delaware, Duchess of Oldenburgh, Dutch codlin, *Early Julien, Emperor Alexander, Gravenstein, Hawthornden, Hicks's fancy, Kerry pippin, Keswick codlin, Manks codlin, Margil, Nonsuch, Red Astrachan, Red Quarrenden, Rymer, Salopian pippin, Wormsley pippin.

Winter Dessert Apples. — *Bringewood pippin, Christie's pippin, Court of Wick, Fearn's pippin, Golden pippins of sorts, Golden Harvey, Isle of Wight pippin, King of the pippins, Kirke's golden reinette, Nonpareils of sorts, Nonpareil russet, Padley's pippin, Ribston pippin, Russet table pearmain, Syke-house russet, Wyken pippin.

Winter Sauce Apples. — Beauty of Kent, Bellidge pippin, Blenheim orange, Cockle pippin, Duke of Wellington, Flower of Kent, French crab, Kentish broading, Kentish fillbasket, King of the pippins, Kirke's Lord Nelson, Lucombe's seedling, Marmalade pippin, Newtown pippin, Newtown Spitzemberg, *Norfolk paradise, Russets of sorts, Striped Holland pippin, Yorkshire greening.

A List of the best Sorts for working on Paradise Stocks, which bear sooner, and occupy less Space, than those on Crabs; fittest for the Borders of Gardens.

Beauty of Kent, Borsdoffer, *Bringewood pippin, Christie's pippin, Cockle pippin, Cole apple, Court of Wick, Delaware, Duchess of Oldenburgh, Dutch minion [mignonne], Emperor Alexander, Fearn's pippin, Golden pearmain, Golden pippins of sorts, *Grange apple, Gravenstein, Herefordshire pearmain, Hollandbury, Isle of Wight pippin, Kerry pippin, *Kilkenny codlin, *Kilkenny Astems, King of the pippins, Kirke's golden reinette, Margil, Nonpareils of sorts, *Norfolk pippin, Padley's royal George, Pomme grise, Red Astrachan, Red Ingestrie, Reinette grise, Ribston pippin, Syke-house russet, Wyken pippin.

List of Sorts best adapted for those who require large Quantities of only a few Sorts, or for Sale.

Blenheim orange, *Bringewood pippin, Carlisle codlin, Cockle pippin, Cockpit, Court of Wick, *Downton pippin, Duke of Wellington, Fearn's pippin, French crab, Golden pippins, Golden russet, Hawthornden, Kentish broading, Kentish fillbasket, Kerry pippin, Keswick codlin, King of the pippins, Kirke's Lord Nelson, Lemon pippin, Lewis's incomparable, London pippin, Minshul crab, Nonpareils, Nonpareil russet, Pomme d'Api gros, Red Quarrenden, Ribston pippin, Rymer, Sack and sugar, *St. Julien, Salopian pippin, Scarlet nonpareil, Striped Holland pippin, Syke-house russet, Yorkshire greening.

A List of a few superior Sorts of Dessert Apples, deserving of a Place on East, South, or Western Aspects on Walls, in which Situations most of them will ripen perfectly on the Tree, in not unfavourable Seasons; and, when gathered fresh, the Flavour is exquisite.

American fall, Beachamwell seedling, *Bringewood pippin, Christie's pippin, Cole apple, Court of Wick, Delaware, Fearn's pippin, Golden pearmain, Golden pippins of sorts, Isle of Wight pippin, King of the pippins, Kirke's golden reinette, *Male Carle, Margil, Newtown pippin, Nonpareils of sorts, Padley's royal George, Pomme grise, Red Ingestrie, Reinette grise, Ribston pippin, Syke-house russet, Wyken pippin.

ART. III. *Memoirs of the Caledonian Horticultural Society.* Vol. IV. Part II.

(*Continued from* p. 469.)

46. *On saving the Seeds of some Culinary Vegetables and Ornamental Flowers in Scotland.* By the late Alexander Henderson, Esq., Dec. 7. 1818. Read March 4. 1819.

MR. HENDERSON thinks that the seedsmen of Scotland might save several varieties of seeds, which they are at present accustomed to import from the Continent; particularly the early white flat Dutch turnip, and the yellow garden turnip. Mr. Henderson states that he has been successful in saving these and other seeds in his own nursery.

47. *On the Forcing of Sea-kale, and on the Culture of Sicilian Broccoli, &c.* By Edmund Cartwright, Esq. Read June 9. 1818.

About the end of October, plants of sea-kale are removed into boxes of common earth, and placed in a dark cellar, out of the reach of frost. The shoots will come into use in six or eight weeks; and if three or four boxes follow in succession, at intervals of a month, there will be a regular supply through the winter. Each box will give two supplies. Sicilian Broccoli is apt to throw out side shoots; it is of easy culture, and of very superior flavour.

48. *On destroying Caterpillars.* By Mr. Alexander Witherspoon.

Well meant, but not sufficiently scientific to do good.

49. *Hints on transplanting Onions; on Canker in Fruit Trees; Scottish Pears, &c.* By Col. Spens of Craigsanquhar. Read June 6. 1815.

Onions. — In late situations, onions cannot be sown in spring, and transplanted, because the bulbs must be perfectly ripe in the autumn, in order to keep through the winter. They must, therefore, be sown in the preceding autumn, in Mr. Macdonald's manner. Mr. Macdonald generally raises a few potfuls of seedling onions in a stove or forcing-house, so as to have them sufficiently early for planting out.

Canker. — "Various are the causes said to bring on this desolating disease. Bad or wet soil and subsoil; exposure to cold bleak winds, in high situations particularly; stricture of the bark; frost in spring, checking the circulation of the sap; external injuries of different kinds; insects lodging in the cracks, and under the old bark; the infirmities of decrepid old age in those varieties long cultivated in Britain; improper stocks, or improper grafting. Though others seem to be of a different opinion, yet Mr. Knight thinks that no topical application will do any good, and that the disease is not of the bark but of the wood: and I am inclined to believe that this may frequently be the case; for, on removing cankered branches, I have often remarked that the very heart was infected and discoloured, and the wood under all the three different barks rotten or diseased. And that it often proceeds from the infirmities of decrepid old age, in those varieties long cultivated in this island, I am also convinced of, from its being so very destructive to young trees in new gardens, in many of which it is very prevalent, where these old kinds are found."

50. *On the Formation of a Gardener's Library.* By Mr. James Smith, Hopetoun House Garden, March 18. 1826. Read April 6. 1826.

It appears to Mr. Smith, that the Caledonian Horticultural Society would advance the interests of gardening by purchasing a selection of the best botanical engravings, and laying them on their table for the inspection of practical gardeners; the same as to engravings of fruits. The principal check to the extended culture of rare and beautiful trees and shrubs is, the ignorance of country gardeners, who have not known them when they were young, respecting their natures. Hence it is, that a suburban garden, of a few square poles, often contains more rare and beautiful American trees than a nobleman's park and pleasure-grounds of 1000 acres in Yorkshire or Perthshire. [A good *Arborètum Británnicum* would go far to remedy this evil.]

51. *On the Cultivation of Peaches and Nectarines on Flued Walls; on screening the Blossoms of Wall Trees by means of Nets and Ferns; on saving Peas and Beans from the Attacks of Mice;*

and on destroying these Vermin. By Mr. Wm. Irving, Gardener to Sir John C. Swinburn, Capheaton. Read June 11. 1814.

Peaches and Nectarines. — The walls are 12 ft. high; the borders 18 in. deep of strong clay, and 18 in. of light soil mixed and placed over a bottom of 6 in. of stones and lime-rubbish. The trees are trained horizontally, because the fruit on trees so trained is thought to be larger and better flavoured. But fan-training is preferred for handsomeness of appearance, and easy regulation of the tree. After the winter pruning, the trees and walls are washed over with a mixture consisting of 2 lbs. of flour of sulphur, 1 lb. of soft soap, and a few gallons of water; the whole boiled together, and thinned by water till it will pass through a syringe.

"Our canvass screens are made very neatly: they are all joined together with a wall-plate at top and another at bottom, and the rafters are all mortised into them; these rest on spikes of wood driven into the border, and the sheets are lashed to small beams at top and bottom. They are 20 ft. long, draw up with pulleys, and are lashed together with small cord, which makes a handsome cover, almost as good as glass. It has been very much admired by several gentlemen, who got models from it."

Screening Blossoms. — Fern is gathered in September, and dried in an airy loft floor, taking care to keep the fronds always on their flat side. "I provide some poles in the young plantations, dress them, and sharpen them at the thickest end; then lay them aside until they be wanted. I furnish myself with some sheet or large-meshed nets; they are the cheapest and best for this sort of covering. In spring, as soon as the blossoms begin to expand, I place my poles about 4 ft. apart, and 18 in. from the wall at bottom, thrusting the sharp end into the ground, and resting the other end against the coping; then drawing the net over them, fasten it at top to the coping, and at bottom with strands of bass round the poles. We then begin at the under part of the net, and tuck in the fern, putting the root end in at one mesh and out at the other, with the top of the fern downwards; all in lines, as if slanting, so thin as merely to touch one another, but allowing them to be a little thicker or closer at the top of the wall. When the fern is all in, I hang another net over the whole, and then make all fast to the poles at different places with strands of bass. To prevent the wind from displacing the fern, all must be done when the weather is calm, for wind would be troublesome. This mode may appear to some tedious; but those who try it will find, after a short practice, that it is an easy operation. Nothing more is wanted until the fruit is all set, and the weather fine; then I take off the upper net, and remove all the fern; but I hang on the nets again for some days, to harden the trees gradually. Then, taking the opportunity of fine soft weather, I remove the whole. This ought never to be done when it is very cold, nor in broad sunshine; for, at such times, sudden exposure would hurt the trees and the young fruit. I have made use of this covering for these thirteen years past with great success, finding it a safeguard against almost all sorts of unfavourable weather. When the fern is wet, it expands itself; when it dries with the sun, it contracts; so that it then makes but little shade. I now stick on the fern, and make a close covering on a snowy night."

Saving Peas or Beans from Mice. — Chop up the tops of the last year's shoots of furze, and sow them in the drills.

Cheap Method of catching Mice. — Sink bell-glasses level with the earth; fill them half full of water; put a little oatmeal over the water in the glass, and a little over the earth about the outside of the glass, " to decoy them to a watery grave." Cover the glasses with straw during winter, to keep the water from freezing.

Art. IV. *Catalogue of Works on Gardening, Agriculture, Botany, Rural Architecture, &c., published since July, 1831, with some Account of those considered the most interesting.*

In enumerating the contents of the Botanical Periodicals, those genera or species marked by a star (*) are not included in the first edition of the *Hórtus Británnicus.*

Curtis's Botanical Magazine, or Flower-Garden displayed; New Series. Edited by Dr. Hooker. In 8vo Numbers, monthly. 3*s.* 6*d.* coloured; 3*s.* plain.

No. LVI. for August, contains

3088. Xanthochŷmus dúlcis. Figured from Bretton Hall, where, in Feb. 1831, a small tree about 10 ft. high was loaded with 200 flowers and young fruit; the latter having every prospect of attaining perfection. The flowers, which are " cream-coloured, almost white," are smallish and produced in fascicles. The fruit, which, in the Molucca Islands, the native station of this species, is palatable and good, is " a rounded or oval berry, of the size of an apple, smooth, and bright yellow, with copious yellow pulp." — 3089. O'lea undulàta. A plant for capacious conservatories, where its dark-tinted, largish, evergreen, deeply waved leaves make it welcome in winter, and where, moreover, it not rarely produces numerous panicles of minute, white, very fragrant blossoms. In the figure cited, the leaves are not enough waved, nor have their petioles or expansion their usual dark tint. — 3090. Melocáctus commùnis. This grows at St. Kitt's, " in very dry and barren places, often on bare porous rocks, into which its tortuous roots penetrate. Its increase in size is very slow. The inhabitants of St. Kitt's have observed plants for a long period of years to make no apparent progress, and tradition estimates the age of some of them at from 200 to 300 years. When the head is by any accident broken off, a cluster of new plants springs up from the wound; by removing and planting which the plant may be increased." — 3091. Aphanochìlus *blándus. Unshowy; related to the mints. — 3092. **Arracàcia* esculénta. An umbelliferous plant, devoid of beauty, save in its usefulness, which is very great; its radical tubers being in South America extensively employed as an article of human food. The stems of the plant are from 2 to 4 ft. high, its leaves long and pinnated, resembling somewhat those of celery. The root is a large fleshy tuber, which produces on its surface other knobs or tubers of two kinds; first, those produced from its upper part, which incline upwards, are smallish, and each of which gives off several germs or shoots towards the tip of its individual self (possibly in the manner stem-borne tubers of the potato do); secondly, tubers produced below the above-mentioned, which descend into the earth, and excel the former in size, as they do the parent tuber in tenderness and in the delicateness of their flour or meal; and therefore these are the tubers generally brought to table. Of these one parent tuber will yield eight or ten, besides small ones; the largest of them will be 8 or 9 in. long, by 2 to 2½ in. in diameter, almost through the whole length, as each tuber tapers off suddenly, and has a few small fibres at its extremity. Doubtless the tubers of Georg*ìna* (Dáhl*ia*) will pretty accurately image them to the mind. The tubers of the second kind " yield a food which is prepared in the same manner as potatoes, is grateful to the palate, and so easy of digestion that it frequently constitutes the chief aliment of the sick. Starch and pastry are made from fecula of the tubers, and the tubers reduced to pulp enter into the composition of certain fermented liquors, supposed to be efficacious as tonics. This plant is a native of the vicinity of Santa Fé; and in that city, and indeed wherever it can be procured, the arracacha is as universally used as the potato is in England. For the successful cultivation of it a medium heat of between 58° and 60° of Fahrenheit, and deep black mould that will easily yield to the descent of the large vertical roots, are requisite. It is propagated by planting pieces of the root, in each of which must be an eye or shoot: these acquire in three or four months a size sufficient for culinary purposes; though, if permitted to continue six months in the ground, they attain immense dimensions, without any injury to their flavour. [We have previously (Vol. VI. p. 326.) given the mode of cultivating the arracacha in the Caraccas, on the authority of Mr. D. Fanning.] The colour of the root or tuber is white, yellow, or purple, but all the varieties have the same quality." Dr. Bancroft, who has introduced the arracacha into Jamaica, where it is now flourishing, says: — " In flavour it appears to me nearly to resemble a mixture of the parsnep with the potato." On first tasting arracacha some like it, some do not: on repeated trials the relish for it increases. The root requires to be thoroughly cooked. " At all events, a vegetable which has for so many ages been the constant and favourite food of a considerable portion of the population of South America, in preference even to the potato, which is there indigenous, ought not to be thought undeserving of a fair trial in the way of cultivation in Jamaica." The arracacha is at present rare in England, and may continue so; for some of the plants imported have not thriven satisfactorily. It is a perennial, doubtless, and in Britain will require the shelter of glass. The tubers of the plant remind us of those of two British umbelliferous plants, the *B*ùnium flexuòsum (and *B*. Bulbocástanum also) and *C*icùta viròsa, both producing tubers. Smith, in his *English Flòra*, remarks that, in the Umbellíferæ, those species which inhabit high dry sites are usually wholesome, those inhabiting watery sites usually poisonous. The species named beautifully illustrate this position; for the tubers of *B*ùnium, a lover of dry pasture, are quite agreeably flavoured, and readily eaten by children, and by pigs, which will turn up the soil to obtain them; while the tubers of *C*icùta viròsa, the inhabitant of swamps, are said to be rankly poisonous, as the term viròsa implies. On this principle, it may be doubted if growing celery between water trenches, as some horticulturist has somewhere suggested, will increase the wholesomeness of this esculent, although, without a question, the mode will greatly contribute to increase its magnitude. — 3093. *A*'rbutus *mucronàta, Mucronate-*leaved* Arbutus. A shrub, with numerous diffuse branches, very small leaves, and white blossoms, resembling those of the lily of the valley. Bloomed in May, 1830; and is yet rare. A native of the Straits of Magellan. Introduced to the Clapham nursery by Mr. Anderson. — 3094. Calceolària *angustiflòra, Narrow-flowered Slipperwort. A new species, from Canta in Peru. Flowers numerous and yellow, resembling somewhat those of C. integrifòlia. " The upper lip of the corolla is wanting, there being only a scarcely prominent ring passing round the germen."

No. LVII. for September, contains

3095. *Anòna* squamòsa. " The sweet sop, or sugar apple," which, although its native country may not be clearly ascertainable, " is now cultivated abundantly in the new as well as in the old world, and principally on account of its fruit. In the French colonies it is called *pomme canelle*, and *cœur de bœuf*, and is highly esteemed for its agreeable flavour." *A.* squamòsa forms a tree or large shrub 14 or 15 ft. high; its fruit is " compound, large, roundish, or oval, of a yellowish-green colour, embossed with prominent, oblong, and somewhat imbricated, obtuse, adnate scales (whence the name squamòsa), which in maturity spread and are more depressed; internally filled with as many pulpy cells as there are united fruits, some being abortive, the rest one-seeded: these all radiate from a central oblongo-acuminated receptacle, from which the pulp when ripe readily separates." Drawn from a specimen produced in the Island of St. Vincent. — 3096. Tournefórt*ia* **h*eliotropiöìdes. " This plant has so completely the aspect of a *H*eliotròpium, that, without an examination of the pistil or fruit, no one would suspect it to belong to the genus Tournefórt*ia*. As an ornamental plant, its merits may be ranked with our well-known *H*eliotròpium peruviànum and corymbòsum, but its flowers are devoid of fragrance." A shrubby perennial; a native of Buenos Ayres. Flowered for the first time in the stove in May, 1831; corollas pale lilac. — 3097. Trìllium *dìscolor. Agrees with T. séssile " in the sessile leaves and sessile erect flowers; but from which it is strikingly different, no less in the broadly ovate petals, than in their peculiar pale greenish yellow hue, which also exhale an odour resembling that of the American allspice " (Calycánthus flóridus). Sent under the name dìscolor, by Dr. Wray, along with other rare plants, from Augusta in Georgia, in January, 1831. These plants, skilfully packed in *S*phágnum, have travelled uninjured. The T. dìscolor flowered vigorously in the green-house in May, 1831; but will probably prove as hardy as the other species already in our gardens. — 3098. Brasavòl*a* élegans. An elegant-habited orchideous plant, with narrow somewhat grass-like leaves, and whose slender scape, about 2 ft. long, supports about a dozen largish rose-coloured blossoms. It is the Cyrtopòdium élegans of Hamilton's *Pródromus of the Plants of the West Indies*. It is a native of Antigua, where it grows " neither in soil, nor upon trees, but upon stones and upon lofty rocks of the trap formation, along with Epidéndrum ciliàre, Oncídium pulchéllum, Pitcaírn*ia* bromel*iæfòlia*, Pílea *m*uscòsa, Peperòmiæ, and many species of ferns." B. élegans seems not to have yet reached Britain. — 3099. Houstòn*ia* *longifòlia. A perennial, with stems, from 4 to 6 in. high, and white or very pale purple corollas. Introduced from the Blue Mountains of North America, by our correspondent Mr. Blair. — 3100. Palàv*ia* *rhombifòlia. " This is a very pretty plant, and, if it will bear cultivation in the open border as an annual, promises soon to become common." Plants raised from seeds collected by Mr. Cruickshanks, in the spring of 1830, near Lima, have borne a profusion of largish rose-coloured blossoms in a hot-bed in the Edinburgh botanical garden. *M*álope trífida gives a near idea of the plant. — 3101. *A*splènium Nìdus. In its native countries seems to be a parasite on the trunks of trees. It is a highly ornamental plant, and deserving a place in every collection. Its fronds form a circle, hollow in the middle, and would alone justify Linnæus's epithet Nìdus, or bird's nest; but, in addition to this, he says, " the root fixes itself upon the lofty trees, whence the leaves rise erect, and arrange themselves in a circle like an umbel, in the hollow centre of which the birds frequently build their nests." Each leaf or frond of this fern is from " 2½ ft. to 3 ft. in length," undivided, and of a rich green colour, studded beneath with the parallel lines of dark brown fructification: it is a superb plant, and is, we believe, in Messrs. Loddiges's matchless filicetum.

Edwards's Botanical Register. New Series. Edited by John Lindley, F.R.S. L.S. &c. Professor of Botany in the London University. In 8vo Numbers, monthly. 4*s.* coloured.

No. VI. of Vol. IV. for August, contains

1427. Hòve*a* lanceolàta *lineàris. An elegant small-sized green-house evergreen, with purplish lilac blossoms. — 1428. Maxillària *tetragòna. A shy-growing species, not beautiful, whose flowers, produced in June, have the fragrance of fresh violets. — 1429. *S*álvia *foliòsa. A Mexican annual, with azure blue blossoms expanded in August and September. The plant is new, and readily propagated by seeds. — 1430. Bánks*ia* *q*uercifòlia. Beautiful. — 1431. Cheiránthus mutábilis. A beautiful old green-house plant, not near so prevalent as it should be; it is most easily cultivated. — 1432. *R*anúnculus *créticus var. macrophýllus. A frame perennial, with fine foliage and large yellow flowers. — 1433. *Eulòphia Mack*aiàna.* The Zygopétalum Mackàii of our *Hórtus Británnicus.* A lovely stove orchideous plant.

No. VII. of Vol. IV. for September, contains

1434. Mirbèl*ia?* Baxtèr*i*. From New Holland about the year 1825, by Mr. Baxter. A remarkably free grower, running like Brachysèma latifòlium. It does not increase well by cuttings, but layers succeed better. The plant is always in flower, except about three months in winter: it commenced flowering last February, and had not been a day without flowers till the middle of August, when fresh blossoms were again about to expand. The leaves are evergreen, not large, and placed oppositely, consequently in pairs. The flowers are not large, and are yellow spotted with red, and disposed about five together in clusters. — 1435. *L*upìnus Sabini*ànus* (L. Sabìn*i* of our *Hórtus Británnicus*). A perennial herbaceous species, with fine racemes of yellow blossoms: it has been hitherto found difficult of cultivation, and is, in consequence, extremely scarce. Drawn from the Horticultural Society's garden. — 1436. *Pæònia* albiflòra var. *Pótts*ii.* A splendid crimson-flowered garden variety, originated in China, whence it was brought to the Horticultural Society, by the late Mr. John Potts, after whom Mr. Sabine named it. The handsomest kind of the whole genus, but extremely scarce at present. — 1437. *P*ýrus Bollwyller*iàna*; the P. Pollvèr*ia* of our *Hórtus Británnicus* and of other works. " The Bollwyller pear tree grows in the woods round the town of that name in Alsace." Of no value as a fruit, but common in shrubberies as an ornamental tree; increased by grafting on the crabstock. — 1438. Rose *Clare. Sent from Italy, with several other beautiful kinds of rose, by Mr. Clare. Its blossoms are single, and its principal charms are its constant flowering, and the deep rich crimson of its petals. Perhaps it is " a hybrid between *R.* índica and *R.* semperflòrens," or, perhaps, from their styles being similarly formed, it is rather " a domesticated variety of *R.* sempervìrens." Its foliage is of rich deep evergreen, and it is as hardy as the common China rose. Grown for several years against a west wall; it has not exceeded the stature of

6 ft.; cuttings strike root freely.—1439. Pimelèa *intermèdia. A neat green-house species; intermediate, as it were, between P. sylvéstris and P. hùmilis; its flowers are white, and produced in March. Introduced by Mr. William Baxter, who found it in 1824 in King George's Sound, in New Holland. Published from the Clapton nursery. — 1440. *C*ròcus vérnus var. *píctus. A handsome variety. — 1441. *A*càcia lepròsa. The *A*. dealbàta of English gardeners. Its heads of flowers are yellow, axillary, and rather numerous. "*A*. lepròsa owes its grey powdery appearance, not to the presence of hairs or scales on its surface, but to the exudation of a brittle concrete matter, which is readily removed by rubbing. A tendency to the formation of this is visible in *A*. dodon*æifòlia*, and even in *A*. strícta, two supposed species, to which *A*. lepròsa approaches so nearly that it is highly probable they will be hereafter considered varieties of the same."

The British Flower-Garden. New Series. By Robert Sweet, F.LS. &c.
In 8vo Numbers, monthly. 3*s*.

No. XXVII. for August contains

105. Œnothèra *anisóloba. A species with large white flowers, and nearly related to Œ. *t*araxacifòlia, than which it is more upright. From Chiloe, and probably perennial. — 106. *A*ndrósace carinàta. A tiny exquisite, from North America. — 107. Habránthus *rdoseus. From Chiloe, with largish rosy flowers. "It will, no doubt, thrive well in a warm border, in the front of a stove, green-house, or wall; the bulbs to be covered with litter in winter to defend them from frost."—108. Adenóphora stylòsa. The Campánula stylòsa of botanical collections; not half so frequent there, or any where, as its elegance and numerous light blue blossoms lead one to wish it to be.

No. XXVIII. for September, contains

109. *Ribes* sanguíneum. The matchless splendour of this hardy shrub is already known. The precocity, abundance, and splendour of its blossoms, and the speedy increase which it admits by cuttings planted in autumn or spring, render its absence from every flower-garden long, impossible. It will grow in almost any soil; but that in which a portion of lime rubbish occurs, Mr. Douglas, the introducer of the plant, considers fittest. — 110. Soldanélla alpìna. — 111. *O*rnithógalum fimbriàtum. — 112. Salpiglóssis *Barclay*àna*. "A hybrid between S. pícta and S. atropurpùrea, raised from the seeds of the former by Mr. Cameron, formerly gardener to the late Robert Barclay, Esq.;" now of the Birmingham Garden.

Botanical Cabinet. By Messrs. Loddiges. In 4to and 8vo Parts, monthly.
Large paper, 5*s*.; small paper, and partially coloured, 2*s*. 6*d*.

Part CLXXII. for August, contains

1711. Pultenæ̀*a* *mucronàta. Like all the family, this, a dwarf shrubby yellow-flowered species, is from Australia. — 1712. Ruéll*ia* Sabini*àna*. Were this plant devoid of its beauteous light blue blossoms, its striking foliage, dark green above and of purplish red beneath, renders it most desirable. —1713. *E*uphórb*ia* spléndens. With bright scarlet blossoms, and its stem so beset with long thorns as to form a vegetable *cheval de frise*. Strikes from cuttings readily. Requires the stove. — 1714. Andrómed*a* *p*olifòlia var. grandiflòra. A Russian variety of this freely growing ornamental species. — 1715. Cattlèy*a* guttàta. — 1716. *E*rìca vestìta var. *blánda. Nearest *E*. vestìta coccínea, but grows more regularly and fuller of branches, and has pink flowers. — 1717. *E*rìca tenuiflòra. Flowers tubular, pale yellow, unshowy, but exceedingly fragrant, especially at night: this is a rare property in heaths. — 1718. *Bérberis A*quifòlium. Mahòn*ia* of some authors — 1719. Calàthea longibracteàta. — 1720. Schiveréck*ia* podólica. The

*A*lýssum podólicum that used to be. A desirable constituent of potted collections, as its tufts of powdered leaves and racemes of clear white blossoms render it ornamental.

Part CLXXIII. for September, contains

1721. *I*bèris Tenore*àna.* A beauty less known than it should and must be. Called perennial, but is only biennial; as it seeds freely, this is but slight detraction from its merits. Plants from seeds self-sown are finest, and well-drained soil fittest for them.—1722. *P*hlóx procúmbens. An interesting pretty species of an esteemed family. — 1723. Grevíll*ea* sulphùrea. Mr. Brown's *Pródromus of the Plants of New Holland* is well known: to that work he has recently (see p. 212.) published a First Supplement, which only includes the plants of one order, Prote*àceæ*, that have been discovered since the publication of his *Pródromus.* Of these there are nearly 200 additional species; hence, observe Messrs. Loddiges: — "If in one single order so much has been discovered in New Holland, what indeed must there be in that immense country of all other plants!" — 1724. Gesnèr*ia* bulbòsa. See p. 569. — 1725. Andrómed*a* *p*olifòlia var. *revolùta. Increased by layers, "which will root sufficiently in from one to two years." We here introduce an extract from Smith's translation of the *Láchesis Lappónica* or *Tour in Lapland*, of Linnæus, which, besides exhibiting Linnæus's reasons for applying the name Andrómed*a* to *A.* *p*olifòlia and its allies, exhibits also a specimen of the powers of memory and imagination imparted to him. In vol. i. p. 188., it is stated that "Andrómed*a* *p*olifòlia was now, June 12., in its highest beauty, decorating the marshy grounds in a most agreeable manner. The flowers are quite blood red before they expand, but when full grown the corolla is of a flesh colour. Scarcely any painter's art can so happily imitate the beauty of a fine female complexion; still less could any artificial colour upon the face itself bear a comparison with this lovely blossom. As I contemplated it I could not help thinking of Andromeda as described by the poets; and the more I meditated upon their descriptions, the more applicable they seemed to the little plant before me; so that, if these writers had had it in view, they could scarcely have contrived a more apposite fable. Andromeda is represented by them as a virgin of most exquisite and unrivalled charms; but these charms remain in perfection only so long as she retains her virgin purity, which is also applicable to the plant now preparing to celebrate its nuptials. This plant is always fixed on some little turfy hillock in the midst of the swamps, as Andromeda herself was chained to a rock in the sea, which bathed her feet, as the fresh water does the roots of the plant. Dragons and venomous serpents surrounded her, as toads and other reptiles frequent the abode of her vegetable resembler, and, when they pair in the spring, throw mud and water over its leaves and branches. As the distressed virgin cast down her blushing face through excessive affliction, so does the rosy-coloured flower hang its head, growing paler and paler till it withers away. Hence, as this plant forms a new genus, I have chosen for it the name of Andromeda." Linnæus has drawn this fanciful analogy farther in his *Flòra Lappónica.* "At length," says he, "comes Perseus in the shape of summer, dries up the surrounding water, and destroys the monsters, rendering the damsel a fruitful mother, who then carries her head (the capsule) erect." — 1726. Prímula pusílla. A Canadian, resembling our Westmoreland beauty, the P. farinòsa. — 1727. *E*rica Patersòn*i* (Paterson*iàna* of our *Hórtus Británnicus*, but perhaps wrongly). "Of much larger growth than the majority of species, as it will readily attain the height of 6 ft. or more, if duly encouraged with sufficient pot room; in fact it does not flower well till full 3 ft. high. Nothing can be more magnificent than its bright gold-coloured blossoms, which appear in May, and are very durable." The blossoms are tubular, and proceed from the axils of the thickly crowded leaves, so numerously as to constitute long dense spikes. — 1728. *Æ*rica regerminans. " A bushy short-growing sort, and begins to flower in autumn, continuing throughout the whole of the winter and spring. The flowers are very fragrant," very numerous, and red and small. — 1729. *P*ýrus spectábilis. A well known, and almost indispensable ornament of shrubberies and lawns. Chinese crab, or apple, it is also called; its fruit, sometimes produced, is austere.—1730. Begòn*ia* dipétala. " It requires the stove, and produces its pleasing flowers in April."

The Botanic Garden. By B. Maund, F.L.S. &c. In small 4to Numbers, monthly. Large paper, 1*s*. 6*d*.; small paper, 1*s*.

No. LXXX. for August, contains

317. Soldanélla alpìna. The soldanella of the ancients was the sea bindweed (Calystègia Soldanélla) of the moderns.—318. *A*nemòne nemoròsa flòre plèno. " Spread over a wide space, and well established; its foliage in spring forms an even carpet of verdure for the earth, which is seen spotted with its delicate flowers, as the blue firmament is studded with shining stars." *A*. nemoròsa abounds in woods in Suffolk, and a recent communication from Mr. Turner of the botanic garden, Bury St. Edmund's, in the *Magazine of Natural History*, vol. iv. p. 442., informs us that " the blossoms of this plant are very fragrant; so much so, that a wood in which it abounds is as fragrant as a bank of violets (*V*ìola odoràta)." The leaves of *A*. nemoròsa not rarely produce two interesting species of parasitic fungi, the Æcídium leucospérmum *Dec.* and the Puccín*ia* *A*nemònes *Pers.*; and the leaves of *A*. coronària produce another species, the Æcídium quadrífidum. Respecting all these, see the lucid and masterly account by Mr. Baxter of the Oxford botanic garden, in Vol. III. p. 490, 491. of this Magazine; and farther remarks on the same subject, in Vol. III. p. 382., and Vol. IV. p. 192. — 319. *P*hlóx *crassifòlia. A very pretty species, assimilating to P. réptans or to stolonífera, but having its corollas more rosy. — 320. *H*ormìnum pyrenàicum. Its deep blue corols are pleasing; but it never will be every body's plant.

No. LXXXI. for September, contains

321. *R*anúnculus amplexicaùlis. A well known perennial, which, from it glaucous entire foliage and white blossoms, we think peculiarly elegant; and it is very desirable in every garden, from its flowering early, and from growing without trouble in various soils and situations. *R*. *p*arnassiæfòlius, a species exhibiting the same habits and same features, but still " more elegantly touched," is cultivated with much greater difficulty. This difficulty probably proceeds from not assimilating our mode of culture sufficiently to the plant's native habits. Its native stations are the lofty ledges of the Pyrenees, immediately contiguous to the limits of perpetual snow. The figure represents an excited, distorted, unusual specimen. *Curtis's Botanical Magazine*, t. 266., is as it should be. — 322. Aquilègia canadénsis. " Independently of the positively virtuous sentiments which the dissection and examination and study of flowers originate, the mind must thereby become less and less the willing receptacle of meaner subjects." Flowers in the figure not true to nature: those of *Botanical Magazine*, t. 246., far better. — 323. Hepática tríloba; single and double blue; the colour of the double blue too light, it being naturally considerably more intense than the single. The raising of hepaticas from seed recommended on the experience of Dr. Hill, author of a folio on gardening, both for obtaining new varieties and more strongly growing plants of old ones. Transplanting hepaticas when in blossom recommended. Surely a fitter time is August or thereabout, previously to the commencement of their autumnal rooting, on which their vigorous blossoming in spring must

needs depend. — 324. Silène marítima. Eulogised as a rock plant and justly, and tastefully exhibited in the figure on a fragment of rock. It will, however, flourish in any dry soil. Mr. Maund has found it abounding on the coast of North Wales, as we have done on that of Suffolk: at Aldborough, where the beach is formed wholly of pebbles, and among these, at considerable distance from the briny tide, where they have become stationary and solid, it is that the S. marítima prevails. Of this plant Messrs. Young of Epsom cultivate a variety bearing large double blossoms.

*Chandler and Booth's Illustrations and Descriptions of the Camell*ièæ. In Imperial 4to Parts, every three months. 7*s*. plain; 10*s*. coloured; and 18*s*. extra-size.

Part IX. for August, contains

33. Caméll*ia* japónica álba *semidùplex, *Palmer's* semidouble white Japanese Camellia. " The flowers consist of eight or nine roundish white petals, arranged in two rows, or even three rows, when they happen to be more numerous than this, and the flowers average more than 4 in. in expansion. The largest petals are round, and about 1½ in. across; the others are roundish, oblong, and a little smaller; all are extremely delicate, like those of Welbank's white. — 34. Caméll*ia* japónica *concínna. *Chandler's* elegant Japanese Camellia. This variety was raised by Messrs. Chandler, in 1819, from seeds of the Waratáh, and possesses much beauty, although less brilliant than some others; it is not so well known as it should be. " The flowers open well, are very regularly formed, and of a fine rose colour, and exceed 3 in. in diameter; and are little inferior in appearance to those of exímia or those of imbricàta; the petals being nearly as numerous, and arranged with equal symmetry." — 35. Caméll*ia* japónica spléndens, *Allnutt's* splendid Japanese Camellia. This is the variety coccínea, No. 28. of our *Hórtus Británnicus*, p. 293., and is "a much admired variety." The brilliant red blossoms, 3 in. broad, are particularly showy; and, as they are produced abundantly both on young and on old plants, the variety is really a most desirable one. " The petals are all deeply veined, and, though less numerous than in some varieties, are so arranged in the centre as to form flowers to all appearance perfectly double; the petals, too, are so remarkable for their roundness as to give the flowers a peculiar character; by which the variety may be readily distinguished. The plants in habit are similar to the single red, but stronger and more bushy; the branches are upright, round, and twiggy, and of a deep brown colour." — 36. Caméll*ia* japónica *R*òsa sinénsis, Chinese Rose Japanese Camellia. A bold-flowering, freely blooming, first-rate variety; raised by Mr. Chandler about 1819. The pale purplish red flowers are pretty full of petals, extremely handsome, and 4 in. in expansion, bearing considerable resemblance to those of C. japónica élegans.

The Florist's Guide and Cultivator's Directory, &c. By Robert Sweet, F.L.S. &c. In 8vo Numbers, monthly. 3*s*. coloured; 2*s*. plain.

No. XLIX. for September, contains

193. Rose Galatea Tulip. From Mr. Pile's collection. " Flower stem perfectly upright; flower spreading when in full bloom; petals (sepals) obovate, rounded at the tip, and having a notch there; white, variegated with broken broad lines of a beautiful rose colour at intervals; the edges of the same colour, and feathered inwards with unequal stripes." — 194. Solon Picotee. " Flowers very large and double, of a handsome form, although not very regular. Petals broad and rounded, arranged in several irregular circles, coarsely notched at the edges, white, edged with dark purple, feathered inwards irregularly, and generally marked with a few lines of the same colour in the centre; the small central petals are usually incurved. This variety is drawn from the collection of Mr. T. Hogg, *Paddington*, who received it and others from Germany. Some of these

others are in the same style, " the colours of which on blooming were red, brown, and dark purple; in one or two blossoms the white ground was scarcely perceptible; for a very broad coloured margin, with numerous close lines and dots, covered nearly the whole of each petal; all of which were traced and marked with the greatest regularity: the names of the most remarkable sorts in this way are, the Queen of Wirtemberg, Brunhilde, Pythagoras, and Paganini." In consequence of the vast improvement that has of late years taken place in picotees, " there is a more correct and nicer taste abroad, and the old sorts, with jagged edges, have nearly all disappeared." The kind called Prince George of Cambridge is recommended as a very superior flower; whether in the style of the above is not stated; but most probably not. — 195. Adrian Ranunculus. Drawn from the garden of W. Strong, Esq., of Brook Green. " Flowers double, and rather handsome, but the petals are rather loosely disposed, of a beautiful yellow colour, tinged with green towards the base." — 196. Lawrance's La Joie Tulip. An elegant bybloemen. " Flower-stem erect, bearing a leaf below the middle; flowers large and spreading when in full bloom; petals broadly ovate, quite blunt, and rounded at the points, tapering to the base, imbricate at the edges, pure white, neatly edged with dark velvety purple, feathered inwards, and sometimes marked with irregular stripes of the same colour in the centre." Was raised by W. Clark, Esq. and broken by Mr. Lawrance (see Obituary, p. 639.). " It is of dwarf growth, and fit for the first or seventh row; it seldom varies in size, shape, or colour, and is valued at five guineas the root."

The Horticultural Register, and General Magazine of all useful and interesting Discoveries connected with Natural History and Rural Subjects: conducted by Joseph Paxton, F.H.S., Gardener and Forester to the Duke of Devonshire, and Joseph Harrison, Gardener to [we believe] Lord Wharncliffe. In monthly Numbers, 1*s*. each.

No. I. for July, contains

An introduction, in which the conductors state, what they call, "the reasons of presentation;" the principal of which seems to be the following:—

" The primary object we have in bringing the present work before the public is to afford, at a cheap rate, a medium circulating, to a far greater extent, every real improvement and interesting account, than has heretofore been done; whether it relates to horticulture, natural history, or subjects of rural and domestic economy; in doing which, we feel it incumbent upon us to state, that, as practical gardeners, we are not allowing our names to be applied to the *Horticultural Register* for any booksellers' purposes; having no other than the required connection with them as our printers and publishers: but our object is, to promote and further, in every possible way, the interests of all lovers of horticulture and admirers of other branches of natural history; and in endeavouring to accomplish this, the utmost attention will be given by us to obtain full, clear, and correct descriptions of all real improvements connected with the subjects in hand, and also of whatever will be useful and interesting."

Farther on we are informed that, " in order to furnish the readers of the *Horticultural Register* with a correct description of all new and valuable fruits, flowers, and improvements in horticulture, whether it consists in vegetable culture, landscape-gardening, or designs of horticultural buildings, we have obtained the promises of the proprietors of nearly all the public horticultural establishments in the kingdom, and of a great number of practical and landscape-gardeners of the first-rate eminence in their profession, to supply us regularly with notices and descriptions of every thing that will contribute to the purpose."

After inviting the assistance of practical gardeners " from every quarter of the globe," and adding that no pains or exertions will be spared to render the work of general acceptation, the sixth page commences with

Part I. *Horticulture*. Original Communications. Art. 1. Description of a House for forcing Vines in Pots. By Mr. Stafford, Gardener to Richard Arkwright, Esq., of Willersley Castle, near Cromford, Derbyshire. The vines are proposed to be grown in pots, placed on a sloping stage over a pit or air-chamber, heated by flues. In the front of the house it is intended to have vines to supply the rafters when the plants in pots have ripened their fruit, and may be removed. These vines are kept torpid till May, by excluding them from the air of the house by a 4-in. wall about 1 ft. within the front wall, and a covering of boards sloping from the former to the latter. The space so enclosed communicates with the open air by apertures in the front wall; and thus the temperature will be kept sufficiently low to prevent the vines from breaking till the desired season. "In respect to the treatment of the plants [in pots], I never throw them out on account of old age, I always renovate them [see below], and have plants ten years of age as perfectly young, to all appearance, as though they were raised last year in the pot. The size of the pots I grow them in is 13 in. wide at the top (inside measure), tapering to about half the width at the bottom, and about 15 in. deep. The soil I make use of is light rich vegetable mould.

"The sorts I would recommend are those naturally prolific, and not the large-bunch-bearing kinds. All the most delicate sorts are superior when grown in pots to any I ever saw grown on the rafters; and I have often proved that a pot placed in the house on the 1st of January, and the same species trained up the rafter and subjected to the same heat, the former will ripen its fruit at least a month earlier than the latter.

"After the vines in the pots have done bearing, the pit might be filled with bark, and pine plants plunged in it, which might be allowed to remain until the vines were again brought in; this should be some time before the rafters are cleared of fruit."

In a note by the conductors, it is observed, that "if a vinery was built on this plan, and well managed, there is little doubt but it would produce sufficient grapes for a small family nearly the whole of the year. For instance, suppose the first plants in pots were put in on the 1st of December, these grapes would be ripe about the end of April or beginning of May; a quantity more might be introduced on the 1st of February, to ripen about the latter end of June; the half of those on the rafter should then be put in action about the beginning of April; these would ripen in August; and the other half of the rafter crop could be introduced by the middle of May, which would ripen in October; and in August more pots might be brought in, to ripen in January; thus giving a complete succession of grapes all the year round."

It is added: — "Mr. Stafford is a practical gardener of the first order, and one of the best grape-growers we are acquainted with; he furnishes Mr. Arkwright's table with grapes nearly all the year round, and that in superabundance. His plan of treating them in pots is deserving the attention of every person who has a hot-house, or is likely to erect one: for it is an astonishing fact, that he can produce nearly as great a weight of fruit as the weight of the soil in which the plant grows; this has repeatedly come under our observation; we can therefore speak of the surprising crops he produces in this way, equally as well swelled, and much better flavoured than when trained up the rafters."

"The means he uses to prevent his plants ever becoming old and useless, is well deserving notice: — He puts the plant deeper in the pot every succeeding year; thus allowing the wood that was above the pot the preceding year the opportunity of making new roots, which it does in abundance. At his next time of potting, he takes from the bottom about the same proportion of old roots; by which practice the vine fills its pot with new roots every year. He attends to them well with water during the whole time of forcing (of course when the fruit begins to ripen they are allowed much less); they appear to answer well, either on spur or single rods, and when any one becomes weakly from over-bearing, it is cut down nearly close to the pot, and allowed a year's rest."

Art. 2. Remarks on Harrison and Curtis's New Mode of Glazing. By Joseph Paxton, F.H.S., Gardener and Forester to his Grace the Duke of Devonshire, and one of the Conductors of this Magazine. This mode " consists, ' when complete,' in having one plane surface, and no projecting part above the glass, except the collars and small heads of screws employed at the angles to fasten down the squares.

" Having had some frames constructed for His Grace the Duke of Devonshire, we are enabled to give an accurate description of the mode, as well as to state our decided approval of the system, as far as we are at present able to judge."

This mode of glazing is too imperfectly described to enable us to give a clearer idea of it than what the above extract conveys, without recurring to the specification in the Patent Office, which we shall by and by do. We shall only further add, that it is founded on a mode of forming plate glass windows without astragals, invented by John Robinson, Esq., Edinburgh, and shortly described and figured in the *Gardener's Magazine*, vol. iv. p. 178. We have our doubts as to how far it may be found eligible with common glass and common hot-houses; but, nevertheless, we are happy to see it brought forward, and trust it will receive a fair trial. We recommend it to the notice of the Birmingham hot-house builders, who, we think, are the most likely to be able to try it on a large scale.

Art. 3. On changing the Colour of the Flowers of the Hydrángea horténsis. By Rusticus. Struck with the vigorous and healthy state of some hydrangeas, kept by some cottagers, whose flowers were blue, the writer enquired what compost they were potted in, and was told sandy loam, mixed with about one third of fresh sheep's dung. The plants are watered with the same material in mixture, and the effect is always blue flowers.

Art. 4. Arboriculture. On the Neglect of Forest Planting in Great Britain. By Quercus. [E. Murphy, Esq.] The author endeavours to direct the attention of gardeners and others to the science of arboriculture, quoting what is said by Sir H. Steuart as to the ignorance of gardeners on the subject.

Art. 5. On retarding the Blooming Season of the common French and English Roses. By Mr. J. Hayward. Delay pruning till the buds have pushed half an inch or more in length, and then shorten below where the buds have pushed, that the lower buds, previously dormant, may be excited.

Part II. *Horticultural and Rural Subjects*, consists of extracts from the *Gardener's Magazine* for June, *The Memoirs of the Caledonian Horticultural Society*, *British Farmer's Magazine*, *Quarterly Journal of Agriculture*, and from the botanical periodicals.

Part III. *Natural History*. Original Communications. Art. 1. Some circumstances connected with the Natural History of the Goat Moth (Cóssus ligniperda). By Edward Murphy, Esq., Agent to the Horticultural and Arboricultural Societies of Ireland. The technical history of the insect is compiled from Kirby and Spence, and from Lyonnet. The additional circumstances inform us that the caterpillars or larvæ of this moth have committed considerable devastation* on some trees in the vicinity of Waterfall, in the county of Wicklow. A figure of the moth and a figure of its larva are given: that of the latter we think not happily executed. "It occasionally feeds on the ash and oak; but its favourite plants appear to be the alder (*A'*lnus glutinòsa) and the round-leaved willow (*S*àlix càprea); and amongst these its attacks are in a great measure limited to trees growing in watery places. Possibly the great quantity of water absorbed by the tree in such situation may render it more palatable; but the greater probability seems to be, that the soft wood of such trees being more porous than those growing on high and dry ground, offers less opposition to its progress. Be that as it may, the fact of their predilection is certain; ten trees growing in low moist situations being infected for one in a situation of an opposite nature."

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* Dendróphagi (tree-eaters) is an expressive, and to us original, term used by Mr. Murphy for the insects which prey upon trees. A knowledge of these

Another figure is given, exhibiting a piece of alder and the many perforations which had been effected by the larvæ of the goat moth. This "was one of many trees of the same kind, which, in consequence of the innumerable perforations, were not enabled to resist even a moderate blast, and were blown down."

Part IV. consists of *Reviews and Extracts;* and these, in the present number, are from the *Journal of Agriculture*, the *Magazine of Natural History*, the *Gardens and Menagerie of the Zoological Society delineated*, Curtis's *British Entomology*, and the *Edinburgh Philosophical Journal.*

Part V. consists of *Miscellaneous Intelligence* on natural history, rural affairs, and horticulture; of reports of horticultural and floricultural societies; and of a horticultural calendar for July. This calendar is to be continued monthly, and is a really useful article; being a dilatation of, and improvement on, the calendarial index given in each of our last five volumes. We hope some correspondent will oblige us with a similar one.

No. II. for August, contains

Part I. *Horticulture, &c.* Original Communications. 1. A successful Method of cultivating the White Tokay Grape. By Mr. Charles Parkin, Gardener to Viscount Galway, Notts. The method is, to thin out the unexpanded blossom, and by that means to render the pollen more perfect, the stamens more erect, and fecundation more certain. This, with the ordinary treatment in other points of culture, will produce berries of uniform size, instead of, what is very general in the bunches of the White Tokay grape, berries some of which are no larger than small peas, while others are an inch or more in circumference. [The idea is good, and might

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insects, their species, time and mode of attack, &c., is of much importance in arboriculture, and we, as part of the public, hope for much information from Mr. Murphy on this subject. We, however, respectfully and with honest deference, beg to caution him against becoming at all an alarmist; being of opinion that in most cases the Dendróphagi do not commence their operations until some immediate disease has beset the tree or trees they attack. *C*óssus lignipérda in the willows (*S*àlix álba mainly) of the Cambridgeshire fens is no rarity; but neither in these, nor in oak or walnut elsewhere, have we witnessed it, except in trees that were diseased before the larvæ of the *C*óssus were hatched, or the eggs from which they were hatched deposited in or upon the trees.

An article on the Scólytus destrúctor (*auctorum;* Scólytus ínsons *nobis MSS.*) in the *Magazine of Natural History*, vol. iv. p. 152—157. will more fully explain the view recommended. The English name of goat moth for the *C*óssus is very expressive, as its odour resembles that of the goat, as which it is almost as fetid. The woodpecker or popinjay (*P*ìcus víridis) preys on the larvæ of the *C*óssus, and the stench of the bird's stomach, on dissection, is sometimes almost intolerable. — *J. D.*

be applied to the unexpanded blossoms of fruit trees generally; we have seen it tried with success in the case of peaches, pears, and camellias.]

2. On a successful Method of blooming Treviràn*a* coccínea (Cyríll*a* pulchélla). By an Amateur. When the plants have done blooming, gradually lessen their supply of water, so as in six weeks at most to cease giving them any. Set them by in their pots where they will be kept dry, cool, and from frost, till March; then cut off the tops, and carefully divide each pot of roots, with a sharp knife, into four portions, and keep each as entire as possible. Pot each portion in rich sandy soil, in a pot of the 24 size, and so as to cover the tubers with half an inch deep of soil; place the pots in a gentle hotbed, and when the growing stems have become 2 in. high, remove the pots to a vinery. The writer deems the mode of division essential: for where the balls are repotted, without division, he has seen few or no flowers produced; and where the pots are planted with the tubers individually separated, he has found the like result.

3. On the evil Effects of Metallic Hot-houses on Vegetation. By Mr. M'Murtrie, Gardener to Viscount Anson, Shugborough Hall, Staffordshire. A letter from Mr. M'Murtrie to Mr. Sabine, Secretary of the Horticultural Society, against metallic hot-houses. Read at a meeting of the Horticultural Society in the spring of 1827, and noticed by us in our Report of that meeting, Vol. II. p. 242.

4. Account of a large Brussels Apricot Tree. By Mr. Deas, Gardener to His Grace the Duke of Norfolk, Arundel Castle, Sussex. We noticed this tree as the Breda variety in Vol. V. p. 587. from what was stated to us by Mr. Woods, the then gardener; but Mr. Deas says that we were not quite correct; and, instead of setting us right as soon as he discovered the error, which good feeling on his part ought to have directed him to do, he has waited some years, and then sent the correction to another publication. If we had ever declined inserting any correction of this sort, we should not have noticed this circumstance; but as we never have, we do not think that any person can be justified by the law of doing to others as he would wish others to do to him, in sending to one work the correction of an error which appeared in another. Correcting an error is quite a different thing from sending a communication; a man may not choose to do that, because he may disapprove of a work, or of some party connected with it. But the cause of truth and the honour of his employer ought to induce every gardener to correct any error relating to his employer's garden, in the manner in which that correction will be most effectual in remedying it. As to the error in this case, it is so trifling that it is hardly worth mentioning for its own sake; but we have written the above for the sake of the principle which we wish to inculcate, and because we think it very likely that Mr. Deas is not fully aware of its importance.

5. Hints to the Conductors of the Horticultural Register. By A. J. A calendar, laying out a garden, and landscape-gardening, are recommended, and it is stated, that if there be any one branch of horticulture [gardening, according to our arrangement] which, in this reforming age, stands in need of radical reform, it is that of landscape-gardening. In this sentiment we entirely concur; and we might direct the attention of A. J. to a proof of it in the *Horticultural Register*.

6. Floriculture. On the Cultivation of the Auricula. By Mr. John Revell, of Pitsmoor, near Sheffield. Very good directions; but not so far differing from those already published as to justify us in abridging them.

7. Design for forming Subscription Gardens in the Vicinity of large commercial Towns. By Joseph Paxton, F.H.S. This is a good article, and for a very laudable purpose. It is accompanied by a plan for "dividing 12½ acres of ground into fifty small gardens, each garden containing one fourth of an acre. This space would be sufficiently large to produce vegetables and common fruit, for most small families. There would be no

difficulty in establishing a garden of this kind near every large town in the kingdom: and such as Birmingham, Manchester, Sheffield, Liverpool, Leeds, Nottingham, &c., ought to have three or more of them, for the different classes of society; and no town, however small, should be without one or more, as the size of the garden might entirely depend on the number of persons who wish for little gardens. In most large towns there are gas companies, water companies, &c., and we can see no reason why there should not be garden companies. A good way to establish such a garden, we conceive, would be, to have it consist of as many shares as there would be divisions in it; and should any subscriber wish to dispose of his allotment, he could readily do so, either by private contract or public auction. The whole garden should be enclosed with a wall, on which choice fruits might be grown. The cross divisions would be better planted with dwarf apples, or some other kind of fruit trees; they would form an excellent hedge, and also produce a considerable quantity of fruit. In the centre of these gardens should be formed a botanic or flower garden; for if about four acres, in addition to the little gardens, were devoted to the purpose of holding the most beautiful plants, it would greatly induce persons to become subscribers, for the purpose of having the pleasure to walk in this garden after the toils and anxieties of the day.

"Subscribers to this botanic garden might be admitted who did not wish to have a share in the little gardens; this would greatly assist the funds for keeping it in proper order. Schools might also be allowed to walk in this department until a certain hour in the day, by paying a small yearly contribution.

"The expense of keeping in order a little garden so situated would be according to the inclination of the individual possessing it, for such must have the entire control of his own compartment; but, for the assistance of all who wished for information, it would be necessary to have a first-rate gardener to give all the instruction required, as well as to have the entire management of the ornamental part, and be responsible for the labourers employed by the different subscribers properly attending to their duty: this would be very satisfactory to a proprietor, knowing, that, although prevented from attending himself, his garden would be as well managed as the best private garden in the kingdom."

The wood-cut accompanying this paper is a parallelogram, divided lengthwise into three parts; the centre part being the botanic or ornamental garden, and the two side parts being divided into the small vegetable gardens. There can be no objection to the general arrangement; but the laying out of the ornamental garden is liable to all the objections which we have made in our preceding Number, p. 400., and illustrated by the engravings in p. 401., to the practice of putting down groups or clumps at random; in short, we could not have referred to a better figure as an illustration of the prevalent bad taste in this way, which we entirely disapprove, from the neglect it manifests of the principle of having always a "sufficient reason." * The water, in the same plan for an ornamental garden, has numerous bays and sinuosities; but scarcely a tree or bush near any of them: there are two bridges across it, and two walks over these bridges, which, in their junction with the main walks, are objectionable also on the before mentioned principle of not exhibiting a sufficient reason. On flat surfaces there ought to be no turns in the walks for which a reason is not made evident by the position of the adjoining groups, trees, or plants: here there are numerous turns, windings, and junctions of walks, without any apparent reason whatever. We regret to be obliged to make these remarks on a plan, of the general purpose of which we so highly approve.

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* This principle of Leibnitz will be found applied to gardening and architecture in Dugald Stewart's *Philosophical Essays.*

All the objections which we have made to it, and which we might make, if we chose to enter farther into details, may be gathered from our first article in the last Number. We shall by and by show a plan having the same object in view, and adapted for a piece of ground, now occupied as a nursery, in the neighbourhood of Birmingham.

8. On Labourers' Cottages recently erected at Thurlby in Lincolnshire. By Artus. When Sir E. F. Bromhead "came into possession of the estate, he found it divided into large farms, and let but to two or three tenants; consequently his parish had very few inhabitants. He divided each of these farms, and increased his population. What few labourers were in the village had only the meanest and most uncomfortable of hovels to reside in, and their state was that of complete degradation: they now begin to feel they are men and to *enjoy*, rather than *endure*, existence.

"Each of these cottages contains two dwellings. In front, betwixt it and the road (from which it is separated by a green hedge and a deep ditch), is a garden belonging to both, and only divided by a walk down the middle. Behind is an entire yard to each house, fitted up with a pigsty and every other convenience. The entrance to each dwelling is from its own yard; and a road is left, closed with a gate, at each end of the garden, by which the yard is entered, and coals and other articles brought in. To each single house is allotted an acre of land, independent of the garden, for the inmates to cultivate as they think proper; thus finding a profitable employment for the labourer's wife when she has time to spare, for such children as are fit for labour, and for the man himself, on a summer evening, after he has finished his daily task at his employer's.

"The erection of these cottages has not been attended with much expense. They are built of brick, and covered with tiles or thatch; the bricks and tiles, I think, made upon the spot. They are plain buildings, *and destitute of all those external ornaments, which, like the crested buttons on a livery suit, proclaim the dependence of the possessor.* Yet, covered as they are with fruit trees, shrubs, and climbers, they are not void of beauty, though that beauty may be somewhat different from what a fastidious fancy would call the picturesque."

9. Arboriculture, No. 2. Outline of the Theory of Arboriculture. Food of Plants. Analysis of Soils. By Quercus." The substance of this paper has already appeared in this Magazine in Johnson's *Outlines of Horticultural Chemistry.*

Part II. *Horticultural and Rural Subjects.* Reviews and Extracts. *Pỳrus Màlus* Brentfordiénsis is noticed, deservedly praised, and objections made to the want of synonymes. Nearly six pages are taken from the Gardener's Magazine for June, and four more from other periodicals.

Part III. *Natural History.* Original Communications. 1. On the Havock committed by the short-tailed Field Mouse (*Mùs arvàlis*), in the Plantations of the Forest of Dean. Communicated by Mr. E. Murphy.

"'Before the autumn of 1813,' says Mr. Billington [whose book we reviewed, Vol. VI. p. 473. and 674.], 'the mice had become so numerous, that we could pick up four or five plants of the larger five year old oaks, on a very small piece of ground, all bitten off, just within the ground, between the roots and the stem; and not only oak and ash, but elm, sycamore, and Spanish chestnut, of which, however, they did not appear to be so fond as of the two former. The hollies which had been cut down produced abundance of suckers, which were destroyed in the same manner, and some of them, which were as thick as a man's leg, were barked all round, for four or five feet up the stem.' The crab tree, willow, furze, larch, spruce, in a word, every kind of tree, and even grass, particularly cocksfoot grass, seemed equally acceptable to these voracious little creatures; till at length 'Lord Glenbervie became so alarmed about the final success of raising a forest, that we were instructed to pursue every means we could think of, by cats, dogs, *owls*, poison, traps, &c. We were, rather than not accomplish our object, to cut up all the grass by the roots; no expense was to be an obstacle, even if the cost should be more than the enclosing, paling, and planting; so anxious was His Lordship for the success of the undertaking.' — 'Operations were immediately commenced with traps and baits of various kinds, with poison, with dogs and cats; but all to no purpose. At length, a person hit upon a simple and, eventually, a very efficacious mode. Having, in digging a hole in the ground some time previous, observed that some mice, which happened to fall in, could not get out again, the idea of forming similar holes was suggested: he tried it accordingly, and found it to answer.'

"In short, holes about two feet long and ten inches broad at the top, and somewhat larger every way at the bottom, were made at twenty yards apart, over about 3200 acres of plantation; persons went round early in the morning, to destroy such mice as might be found in the holes. 'In this way, besides what the owls, hawks, magpies, and weasels took out of the holes (and several of these depredators lost their lives in attempting to seize their prey), 30,000 mice were paid for by government; nor were they extirpated until they had destroyed, in four enclosures, amounting only to 1700 acres, the astonishing number of 200,000 five year old oaks, together with an immense number of acorns and young seedlings.'

"'It is said by naturalists,' observes Mr. Billington, 'that the beaver will fell trees with his teeth, but I have never seen an account of mice felling oak trees; yet I have seen many trees 7 or 8 ft. high, and an inch and a half in diameter, cut down by them. When examining for the thick part of the root, below where it was bitten off, I could never find any part of it left, so that it is very probable it was eaten by them. I have by me several trees, so cut down, for the inspection of any person who may be desirous of witnessing, with his own eyes, the wonderful powers of so diminutive a creature as the mouse in felling trees.'"

Part IV. *Reviews and Extracts.* These are chiefly from the *Gardens and Menagerie of the Zoological Society*, and from our *Magazine of Natural History.*

Part V. *Miscellaneous Intelligence, on Natural History, Horticulture, and Rural Affairs.*" This part contains a Catalogue of Plants flowering in the principal Nurseries around London, in August; and a variety of extracts from books and newspapers; concluding with a Horticultural Calendar for August. We observe that the botanic names in this list are not accentuated [*]; for the sake of the young gardener, this ought to be done in every case; and we should say, not only accentuated, but their derivations indicated in the manner adopted in our Magazines, and in the *Hórtus Británnicus.* Neither are the names in the Natural History department accentuated, nor their derivations given, which, considering for whose use the *Horticultural Register* is intended, is a defect which ought not to be passed over.

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[*] The names taken from the botanical periodicals are accentuated, but not always correctly. No. 1. being a first attempt, we pass to No. 2.; and in this we find errors far too numerous for individual notice. For instance, in the space of six lines, in p. 77., occur, Bérberis Glùmacea (glumàcea), Erìca Plumòsa (plumòsa), Eríca Seratifòlia (Erìca serratifòlia), and Anemòne Acutipètala (acutipétala); affording an exemplification of false accentuation, false spelling, and false capitaling, any thing but creditable to a work purporting to be published for the guidance of practical gardeners. We hope that future Numbers will exhibit greater accuracy in these matters; and for the accentual marks, indispensable to perfection as we deem them, it would be better to omit them altogether than to place them incorrectly.

Among the paragraphs we find one signed J. Simpson, Holloway, stating that he has been very unsuccessful with Bishop's dwarf pea, and advising the conductors of the *Horticultural Register* never to "recommend inferior articles merely because they are new." "Some people," he says, "run away with the notion, that because a thing is new it must of necessity be good. You are practical men," he adds, "and therefore may be considered competent to give a proper opinion on any article when you have seen it." The conductors state that they were almost as much disappointed with Bishop's dwarf pea as their correspondent: they say, "we consider it more adapted to field culture than a garden." We should be glad to know, from such of our readers as have cultivated Bishop's pea, the result of their experience. In the course of our tour thus far (Kilmarnock), we have seen it in very general culture, and heard no complaints of it; in some places, it was praised.

Our readers may expect that we should now say something of the general merits of this new periodical, professing, as it does, to treat upon the same subjects as our own; and being, in its arrangement and manner of execution, even to the vignette on its cover, a close imitation of our Magazines. As the greater part of the work consists of extracts from those Magazines, or of matter which has already appeared or (as in the case of the botanical and other periodicals) is constantly appearing in them, we cannot be expected to offer any criticism upon it. We have suggested the improvement which it admits of, with respect to accentuation and derivation; which, for the benefit of practical men, we trust will be attended to in future Numbers. In the treatment of gardening as an art of design and taste, the *Horticultural Register* has, at present, given no proofs of knowledge. It would indeed be, perhaps, too much, to expect practical gardeners to excel in this department of the art, with their present degree of school education, and their want of that leisure which is necessary to enable any one to acquire an artist's eye and hand. The period will come, however, when taste in a practical gardener will be considered as necessary as a knowledge of culture; and the requisite education and leisure will of course follow. In the mean time, the *Horticultural Register* will help to pave the way for this state of things, by spreading a knowledge of vegetable culture, which will serve as a preliminary step, among those whose minds are not yet prepared to enter upon the higher departments of the art. On this account, and because we think it will at all events do good, we sincerely wish it success; and this wish our readers will the more readily give us credit for, when we assure them, that we consider the *Horticultural Register* in the light of a pioneer to the circulation of the *Gardener's Magazine* and the *Magazine of Natural History.*

Masters, Wm., F.H.S., Curator of the Canterbury Museum, &c.: Hórtus Durovérni: being a Catalogue of Plants and Seeds cultivated and sold by the Author at Canterbury. London and Canterbury, 1831. Third Edition, small 8vo. 2*s*. 6*d*.

The plants are arranged in these divisions: hardy perennials, hardy trees and shrubs, green-house and hot-house plants, fruits, and culinary roots; and the seeds into those for the purposes of agriculture, and the flower-garden and kitchen-garden. Under each division a rich collection, for a provincial nursery, of well selected species and varieties is exhibited. Besides these things, the book merits notice, as the first we have seen in which the significant typography, and, for the most part, plan, of Loudon's *Hórtus Británnicus* are adopted. It is almost as scientific as that, as far as it goes, and as far as can consist with an alphabetic distribution of the genera, for the purposes of trade, under each division. In the column of native countries, the author judiciously assigns "gardens" as the native place of hybrids and art-created plants. This is a simple and good idea. The letters pl. are appended to many of the species and varieties, which, we are told, "denote that a coloured engraving of the fruit or flower may be seen at the counting-house." This reads well. The great error in the scientific part of the book is the omission of authentications to the generic and specific names; and the only private catalogue we remember as faultless on this important point is the excellent one, by Mr. Penny, of Messrs. Young's collection at Epsom. Nurserymen must eventually encounter this unwelcome subject.

We must not, however, stop here. The subservience of Mr. Masters's catalogue to the purposes of trade and to botany is to us less admirable than the horticultural information infused into it. At the head of every division, and, among the fruits, at the head of every family, are excellent practical directions, descriptions, and suggestions for guiding you both in the selection of what you want, and in managing it when you have purchased it. This is both clever and honourable. As an instance of the nature and value of his directory remarks, we quote the following, which, appropriately enough, is placed at the close of the list of hardy perennials: —

"The brilliancy of modern ornamental gardening has of late been surprisingly increased by the practice of placing many showy plants, that are commonly grown in the green-house, into the flower-border, during the months of May and June. By this means many of our rarer exotics produce a profusion of blossoms that they refuse under any other management. In this manner, also, bouquets of the most rare and beautiful flowers may be gathered with the profusion of our usual garden inhabitants.

"The species and varieties of the following genera are eminently calculated to embellish choice flower borders upon this principle: — Alonsò*a*, *A*nagállis, Bouvárd*ia*, Calceolària, *C*ánna, *C*hrysócoma, Cicònium, Cinerària, Diánthus, Erythrìna, Eùcomis, Fúchs*ia*, Gortèr*ia*, *H*eliotròpium, Lantàna, Lobèl*ia*, *L*òtus, *M*álva, Maurándy*a*, Mesembryánthemum, Pelargònium, *S*álvia, Swainsòn*ia*, *S*enècio, Tropæ'olum, *V*erbèna, &c."

Among the fruits, he gives their colour, shape, size, flavour, texture as to surface and to flesh, and whether fitter for the kitchen or dessert, the time at which they are fittest for use, and the situations in which the respective kinds grow best, &c. When speaking of gooseberries, after remarking the prodigious size of some kinds raised and cultivated in the northern counties, he adds, "Nor are all the large kinds thick-skinned or destitute of flavour, as some assert: on the contrary, many will be found at once tender, flavorous, and highly productive." We are of this opinion, and make the quotation designedly, as some set off to the slight cast upon the large kinds by B., in his humorous note in p. 331. of the current volume.

All things considered, the catalogue pleases us much. "Thirty acres are employed in rearing" the articles it enumerates.—*J. D.*

Forbes, Alexander, Gardener at Levens, Lancashire, to the Hon. Colonel F. G. Howard, &c.: Short Hints on Ornamental Gardening; containing Directions for planting, training, and pruning Fruit and Forest Trees, Shrubs, and Flowers. To which are added, a select List of Fruit Trees, and a general priced Catalogue of hardy Forest Trees and Shrubs. Kendal, 1820. Small 8vo.

This little work consists of two parts: the Hints, which occupy 28 pages; and the Lists, which commence at the twenty-ninth page, and extend to the end of the work, or the ninety-sixth page. With every respect for Mr. Forbes as a practical man, we are sorry we cannot commend him so much as we could wish as an author. We think he would have done well to have previously tried his hand at a few essays in this Magazine. The art of writing, like every other art, is only to be acquired through time and labour.

PART III.

MISCELLANEOUS INTELLIGENCE.

ART. I. *General Notices.*

MACHINE *for cutting Grass on Lawns and Grass-plots.* — On looking over the National Repository, London, with a view to such inventions as might be applicable to gardening or agriculture, we were much gratified to see a machine apparently well adapted for mowing lawns. It is not so much an original invention, as a new adaptation of one of the most efficient mechanical contrivances employed for shearing cloth. In general bulk and appearance, the machine may be said to resemble a small cast-iron roller; when examined, and pushed forward, there is "an obvious fitness for its object, a facility of application, a readiness and nicety of adjustment, and a workmanlike accuracy of execution, that must satisfy every mechanist." The machine has been at work, for nearly four months, in the Zoological Society's gardens in the Regent's Park; and the foreman of the gardens there, Mr. Curtis, informed us (Sept. 23.) that he is entirely satisfied with it. With two men, one to draw and another to push, it does as much work as six or eight men with scythes and brooms; not only in mowing, but sweeping up the grass, and lifting it into a box; performing the whole so perfectly, as not to leave a mark of any kind behind. There is not the slightest difficulty in using the machine: all that is requisite is to have the lawn free from stones or other roughnesses, and the grass perfectly dry. The cutters, we were informed, may require sharpening once in two months; and this is done by oiling them, and drawing the machine backwards, as they then act like scissors, one blade upon another. What is particularly gratifying in the use of this machine is, that the grass is required to be perfectly dry; so that, where it is used (and we are much mistaken if it does not soon come into use in all large grounds), men can neither be set to work at it very early in the morning nor late in the evening. Evelyn tells us, that, when he visited Paris in the end of the seventeenth century, all the short grass was cut in the night-time. This is still the case, though there is not now so much to cut; and in many places in Britain, short grass is of necessity cut very early in the morning, before the dew is evaporated. Even if a corresponding period of rest be allowed to men thus set to work at unseasonable hours, we still think such a mode of labouring has a tendency to oppression; and we rejoice to see the means by which gardeners may in future be emancipated from it. The nearer that all labours are brought to a level, in point of severity as well as skill, the better, for various reasons; and the progress of improvement has decidedly this tendency. We rejoice in this machine for another reason, which is, that it will greatly facilitate the keeping, and, in consequence, multiply the number, of grass lawns in warm countries; such, for example, as the continents of Europe and America.

The machine is manufactured by J. Ferrabee, Phœnix Foundery, near Stroud, Gloucestershire; the price is from seven to ten guineas; and orders are received in London by Messrs. Lewis and Davis, 10. Basinghall Street. We sincerely hope that every gardener whose employer can afford it will procure a machine, and give it a trial, even during the present season. We have little doubt that it will soon be so modified as to be worked by ponies, donkeys, or by small steam-engines; but whether it be or not, it promises, in our opinion, to be one of the greatest boons that science has conferred on the working gardener in our time. We wish we could see as simple, efficient, and cheap machines for cutting grass to be made into hay, and for reaping corn crops. We shall figure the machine for mowing lawns in our next Number.

Cottam and Hallen's Cast-iron vertical Tubes, for circulating hot water (*fig.* 95.), are recommended to gardeners by Mr. Wm. Brown of Norwich, as greatly preferable to wrought-iron vertical tubes. We have examined them in Winsley Street, and agree with our correspondent that they must be much more desirable. The section of the tube is a parallelogram with rounded ends, and one tube is joined to another by small vertical cylinders (*a b*). The same writer states that he has tried Fowler's Thermosiphon (*fig.* 96.) on a small scale, and found it answer in a dwarf wall 12 ft. long, with the north side of boards, and the south side of slate. The apparatus, he says, is placed on a deal board, and drawn out by the end of the wall at pleasure. The boiler and tube of which he has sent the sketch, will be readily understood by turning to Vol. V. p. 453.

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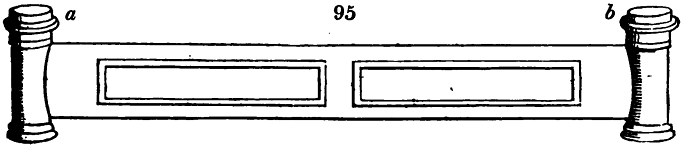
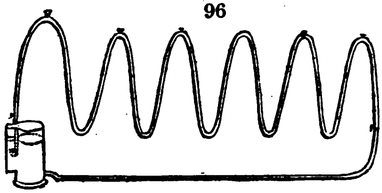
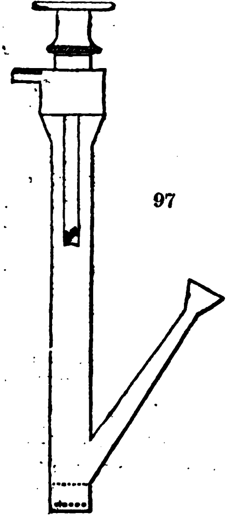


96

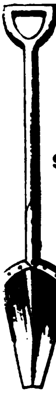


A Hand-Engine for watering Trees was some time ago recommended to our notice by Mentor. Its object is, to apply tobacco-water or soap-suds to the under-side of the foliage of trees. It may be worked in a common pail, or vessel of any sort; and the bare inspection of the accompanying sketch (*fig.* 97.) will enable any syringe manufacturer to supply it.



97

A narrow Spade, for thinning out Trees in nursery lines, which is in use by Mr. Donald of the Goldsworth nursery, deserves to be better known. The fruit-tree stocks, for which the nurseries about Woking have been celebrated for more than a century, when first taken off the stools, are planted in rows 10 in. apart; and the space between the plants in the rows varies from 1½ in. to 4 in., according to their size and the rapidity of their growth. It often happens that some of these plants grow so much stronger than others, that they require to be thinned out the first autumn after planting; and for this purpose Mr. Donald's spade (*fig.* 98.) has the following form and dimensions: — The handle is of the usual length, but the blade is like a long narrow trowel, curved in at the edges, and sharp there; it is 4 in. broad at the tread, and tapers to 2½ in. at the point.



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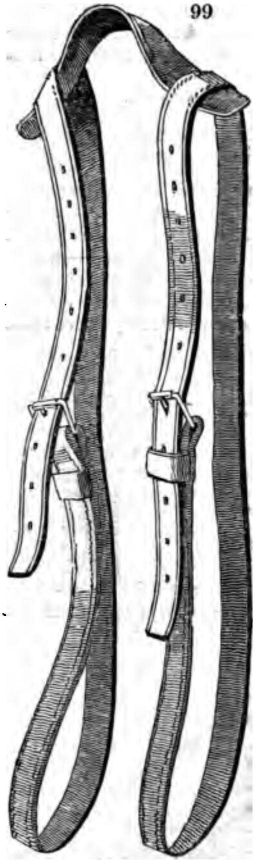
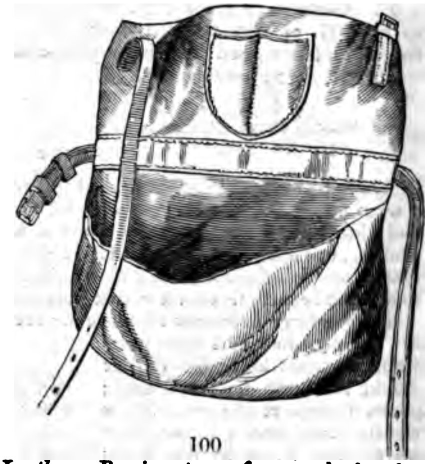




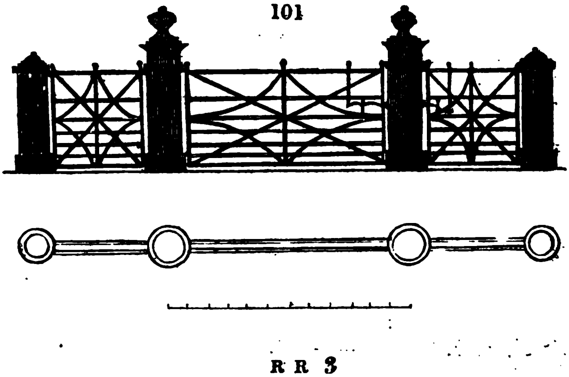
100

Leathern Bearing-straps for use in bearing hand-barrows, or in common wheeling (*fig.* 99.), are also in use in the same garden.

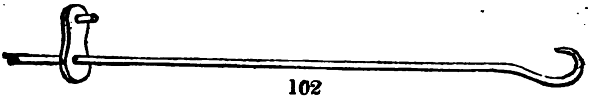
A Leathern Wallet, used in nailing wall-trees in the garden at Ashted Park, is worthy of adoption by others, as well as Mr. Hislop. Besides the large pocket for the shreds and nails, there are two small pockets for a knife and sharpening-stone. Any sadler can make such a wallet from a bare inspection of the figure. (*fig.* 100.)

As a very ornamental Iron Gate, a correspondent at Barnsley points to one at Britton Hall, erected by the late munificent patron of gardening, Mrs. Beaumont. We do not altogether agree with the encomiums bestowed on this gate by our correspondent; but, as we have seen a very handsome drawing of it by our friend and neighbour, Mr. Campbell, we are enabled, through his kindness, to submit an engraving, in order that our readers may judge for themselves. (*fig.* 101.)

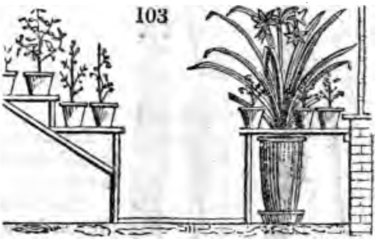
101



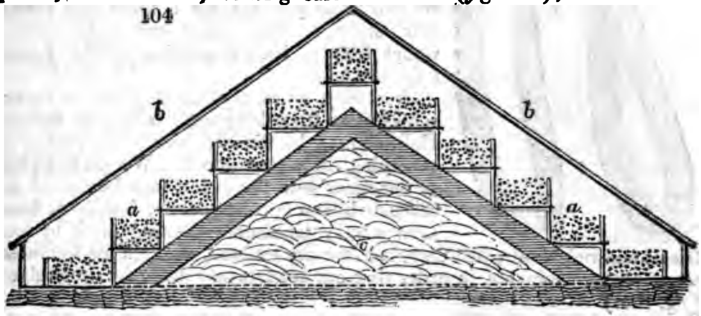
The Orchardist's Crook (*fig.* 102.), of which a sketch has been sent us by J. M. of Gloucester, though cheaper, is less perfect than the one figured and described in our *Encyclopædia of Gardening* (§1351.). It is advisable to have a pin at the end of the rod, to prevent the sliding piece *a* from falling off, in carrying the crook from one tree to another. Every body knows that the use of this crook is, when thinning or gathering fruit, pruning, or taking off insects, to take hold of one branch with the hook end, draw it towards the operator, and then, by hooking on the sliding cross piece to another branch, to hold it in that position till the operation is performed.

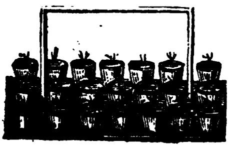

102

To grow large Liliaceous Plants in the Front of a Green-house, where there are an open shelf and large pots, would not only be unsightly, but would raise the pots too high; place, therefore, the pots below the shelf, and let the plants grow up through it, as in the Ball's Pond nursery. (*fig.* 103.) — *G. B. April*, 1830.


103

A Plan for growing early Potatoes, Radishes, &c., was some time ago sent us by Mr. Haythorn of Wollaton. Place two stages, such as are used for green-house plants, back to back, fronting east and west (*fig.* 104.); and form the shelves into boxes (*a a*) of a sufficient depth for soil, and of any convenient length. A sort of frame, or square trellis (*b b*), should be raised a sufficient height above the boxes, to support mats, for protection against frost and stormy weather. Such boxes would be much better than a sloping bed, as they would receive the moisture better, as well as the heat from the dung (*c*). The same scheme might, perhaps, answer for growing early fruits, trained on trellises, in the position of the protecting covers (*b b*). In winter draw the stages from under the protecting trellis, empty the boxes, and turn them upside down, to protect pots, lettuce, endive, &c., from wet and frost. — *J. Haythorn. Wollaton, near Nottingham, Jan.* 7. 1829.


104

105


The Pot-carrier (*fig.* 105.) mentioned by W. C. was many years ago invented by Mr. Anderson of the Chelsea gardens. With two of them a young man can carry two dozen of No. 24 pots, or four dozen of 60s, with the greatest ease.

Art. II. *List of Plants included in the Botanical Periodicals reviewed, or elsewhere mentioned, in the present Number of the Gardener's Magazine, as in British Gardens, but which are not included in the* Hórtus Británnicus.

This list will in future be prepared and published in this Magazine, every two months, for the convenience of the possessors of Loudon's *Hórtus Británnicus.* Every December these lists will be united, and published apart, in an annual Supplement to the *Hórtus Británnicus.* Where the genus is new a star (*) is affixed.

1416. AGROSTE'MMA *L.* Agrostemma. (*Agros*, field, *stemma*, wreath; wild, yet fit for wreaths.)
decúmbens *Denson MSS.* decumbent △ or 1 jn.au C.R Bury bot. g. ... D co
perénnans *Haworth MSS. herbarioque.*
Near A. coronària, but in its decumbent stems, and in other points, duly distinct.

1341. ANDRO'MED*A.* 11036 polifòlia.
grandiflòra *Lo. C.* large-flwd ♄ or 1 ap Pk Ingria ... L p Bot. cab. 1714.
revolùta *Lo. C.* revolute-*lvd* ♄ or 1 ap.my Pk N.Europe ... L p Bot. cab. 1725.

3372. APHANOCHI'LUS.
blándus *Benth.* mild ♃ △? fra 2½ su B Nepal 1827.? S co Bot. mag. 3091.

1345. *A'*RBUTUS.
11079*a* mucronàta *L. fil.* mucronate-*lvd* ■ ⊔ cu ... my W Magellan 1828. L l.p Bot. mag. 3093.

*853. *ARRACA'CIA* Bancroft. (Euphonised from *Arracacha*, the name of the plant in Santa Fè.) *Umbel.*
esculénta *Dec.* esculent ✱ ⍍ esc 3 jn.jl Brsh.R. San.Fè 1823. D r.m Bot. mag. 3092.
Cònium *Arracàcha* Hooker, and Loudon's *Hort. Brit.* No. 6821.

1668. *B*ETO'NICA. 14962 officinàlis.
2 álba *Sm.* white-*flowered* ♃ △ or 1 jl.au W Britain woods D co

65. CALCEOLA'RIA.
27990 angustiflòra *R.&P.* narrow-flwd ♄ ⊔ or 1½ jn Y Peru 1830.? C p Bot. mag. 3094.

2038. CAME'LL*IA* 18166 japónica.
álba semidùplex *Booth* white sem. ■ ⊔ spl 10 mr.ap W China 1822. I l.p Chan. ill. 33.
concínna *Booth* elegant ■ ⊔ spl 10 ap Ro seedling 1819. I l.p Chan. ill. 34.

1271. *CA'*SSIA.
10690*a* Herbert*iàna* Lindl. Herbert's ■ □ or 9 n Y Barbadoes 1828.? S l.p Bot. reg. 1422.

2412. CENTROCA'RPHA *D. Don.*
chrysómela *D. Don* yellow & dark ♃ △ or 2 jl.n Y N. Amer. 1822. D co p. 477.
acutifòlia *Sweet's Hort. Brit.* ed. 2. p. 310. Rudbéck*ia* Newmàn*i* Loudon's *Hort. Brit.* p. 358.
A seminal variety, with its radial and discoid corollules all yellow, exists in Dennis's nursery.

116. *C*RO'CUS. 1010 vérnus.
píctus *Sab.* painted ɤ △ or ¼ mr P.w .... O co Bot. reg. 1440.

1173. *E*RI'CA. 9504 vestìta.
‡blánda *Lo. C.* charming ■ ⊔ or 2½ my.jn Pk C. G. H. ... C s.p Bot. cab. 1716.
9814 vàgans
4 rubéscens *Bree* rubescent ♄ or 1 jl.au Pa.R Cornwall hea. L.C. s. (p. 380.)
5 purpuráscens *Bree* purpurascent ♄ or 1 jl.au Psh Cornwall hea. L.C. s. (p. 380.)

*EULO'PHIA *R.Br.* Eulophia. (*Eulophos*, handsome-crested; labellum bears elevated ridges.) *Orchid.*
Mackai*àna* Lindl. Mackay's ♃ ⍍ spl 2 w.sp B.G.Br. Brazil 1825. D p.rw. Bot. reg. 1433.

975. HABRA'NTHUS.
ròseus *Swt.* rosy ɤ △ or ½ jn Ro Chiloe 1828. O r.l Sw.fl.gar. 2.s.107

343. HOUSTO'N*IA.*
2858*a* longifòlia *Gae.* long-leaved ♃ △ cu ½ ... Wsh N. Amer. ... S p Bot. mag. 3099.

1940. HO'VE*A.* 17281 lançeolàta.
2 lineàris *Lindl.* linear-*leaved* ■ ⊔ or 3 mr P N. Holl. ... S p.l Bot. reg. 1427.
Is this the H. lineàris of *Brown*; the Poirèt*ia* lineàris of *Smith*?

457. *L*YSIMA'CHIA.
3836*a* affìnis *Penny* related ♃ △ or 2½ jl.s Y .... D co Hort. epso. p.31.
Close on, but distinct from, *L.* verticillàta *Pall.*

2537. MAXILLA'RIA.
tetragòna *Lindl.* four-cornered ♃ ⍍ fra ¾ jn G.P Rio Jan. 1828.? D p.r. Bot. reg. 1428.

1183. *Œ*NOTHE'RA.
10038*a* anisóloba *Swt.* unequal-lobed ♃ △ or 3? jn W Chiloe 1828. S co Sw.fl.gar. 2.s.105

2019. PALA'V*IA.*
18023*a* rhombifòlia *Grah.* rhomb-leaved ✱ ○ or ... jn.s Ro Lima 1830. S co Bot mag. 3100.

472. *P*HLO'X.
3918*a* crassifòlia *Lo. C.* thick-leaved ♃ △ or ½ ap Ro N. Amer. 1825. C co Bot. cab. 1596.
3920*a* speciòsa *Bot. reg.* showy ♃ △ or ... ... F Columbia 1826. C s.l Bot. reg. 1351.

87. PIMELE'A.										
796b intermèdia *Lindl.*	intermediate	■ ⊔ or	2	mr	Wh	Kg.G.'sSd 1825.	C	s.p	Bot. reg. 1439.
1262. PULTENÆ'A.										
mucrónàta *Lo. C.*	mucronate-*lvd*	■ ⊔ or	2	ap	Y	N. Holl.	...	S	p.l	Bot. cab. 1711.
1637. *R*ANU'NCULUS 14573 créticus *L.*										
2 macrophýllus *Desf.*	large-leaved	⚘ △ or	2	my	Y	Teneriffe	1658.	D	l	Bot. reg. 1432.
334. RIVI'NA.										
2805a tinctòria *Hamilton MSS.*	dyeing	■ ▭ dy	4	my	W	Caraccas	1830.	S	p.l	
Dr. Hamilton's "Rouge Plant."	May be distinct from all species in Britain, but near canéscens.									
1522. *R*O'SA.										
13470? (Garden variety)	Clare's	■ wall or	6	all sea	Dp.C	Italy	...	C	co	Bot. reg. 1438.
1714. SALPIGLO'SSIS.										
28397a Barclayàna Cameron MSS.	Barclay's	⊙ or	3	jn.s	Br.Y	Eng. hybrid	...	S	lt	Sw.fl.gar. 2. s. 112
intermèdia *Sweet's Hort. Brit.* ed. 2. p. 594.										
76. *S*A'LVIA.										
folidsa *Benth.*	leafy	⊙ or	1½	all sea.	B	Mexico	1827.	S	co	Bot. reg. 1429.
446. TOURNEFO'RT*IA*.										
3732a heliotropiöides *Hook.*	Heliotrope lk	■ ▭ or	2	my	Pa.Li	Bu. Ayres	1829.	C	l.p	Bot. mag. 3096.
118. TRI'LLIUM.										
9140a discolor *Wray*	two-coloured	⚘ △ fra	½	my	G	Georgia	1831.	D	p.l	Bot. mag. 3097.

ART. III. *Retrospective Criticism.*

THE Manchester Garden. — Sir, Although I never expected you would write any flattering account of our garden, I did expect a fair statement of what was done, an outline of the divisions of the garden, and the progress made, &c. But I find in your Number of yesterday, before you give any or very little account of the garden, you set out with some very unfair statements; and in speaking of the plants for shelter, or nurse plants, say "that they are composed of one common mixture throughout the garden." I know that you had that impression at first entering; but I well recollect pointing out to you that it was not the case: and you must remember my saying so, and showing you the tulip trees among the magnolias especially, the common alders with the collection of that genus, the common acacia with the family to which they belong. The *C*aprifoliàceæ, the *O*lèinæ, the *B*etùlinæ, the *Berberìdeæ*, the *R*hodoràceæ, the *P*omàceæ, and many others, have scarcely a plant near them but of the family to which they belong. Many genera, as *S*piræ'a, *Rìbes*, *C*ìstus, &c. &c., have not another shrub in the same clump. The *P*ìnus family, although so difficult to grow near Manchester, is sheltered with larch, spruce, and Scotch pines.* The collection of elms is sheltered principally with elms. The oaks are in a bad part of the ground for soil, and I consider that the common oak wants shelter as much as many of the Americans. This we have an example of in Dunham Park, where such fine oaks grow; all of which were sheltered when in a young state. Our fine collection of the Twelfth Class plants has scarcely another plant in the belt than the *P*omàceæ, the *A*mygdàlinæ, &c.; and, after all the pains which we have been at, to be thus misrepresented is, I think, a very hard case. — *William Mowbray. Botanical and Horticultural Garden, Manchester, Aug.* 2. 1831.

The wretched Stoke-holes of the Comte de Vandes's Garden (p. 414.). — In the hurry of writing our first article in last Number, we spoke of these stoke-holes in the present tense, instead of the past. We are reminded by Mr. Campbell, that "there was a good room for the young men even in Mr. Mowbray's time, but it was without a fireplace, and consequently the stoke-holes were resorted to in cold weather; and these were not so wretched as stoke-holes generally are." He adds, that for this state of things "no shadow of blame could attach to the owners, for as soon as ever they were made acquainted with the existence of the want of comfort (this was in 1822), they expressed the greatest sympathy, and ordered instantly the introduction of a fireplace into the room;" and Mr. Campbell considers that the men at Bayswater are now, "in point of accommodation" at least, on a par with their neighbours. — *Cond.*

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* There may have been larch, spruce, and Scotch pines among them; but, unless our impression is very erroneous indeed, these were very few in comparison with the common mixture of broad-leaved trees. A plan of this part of the arboretum, and of some of the other parts mentioned, with the situation and name of every particular tree and shrub indicated, as requested (p. 557.), would set the matter at rest. — *Cond.*

Procuring Novelties and Varieties from Nurserymen and Seedsmen. — You recommend your readers (p. 366.) to apply to proper nurserymen for what they want; and, as if possessed of Fortunatus's cap, their desires shall be accomplished. Unfortunately for amateur gardeners, the sellers of seeds and dealers in plants keep not equal pace with your Utopian views. De Candolle, Willdenow, and Sweet are nothing to them. Do you want a particular plant? If they have it not, they do not neglect the order given, for that would be to neglect business, but send one of the same genus, or perhaps of the same natural order, according to their classification. Not long since I sent especially for four species of one genus: my order was attended to; but lo! I found but one species correct. What could the poor man do? He could not send what he had not, so he kept to the genus: and I have to regret that this has frequently occurred to others as well as myself. This last spring I sent to a seedsman whom you have frequently recommended, and on that recommendation solely I sent for certain seeds; out of a list of twenty-five sent for, eight were sent named according to order, and ten which were not ordered. The ten volunteers I might or might not have, it mattered not. Among the seeds sent according to order was *L*ìnum *h*ypericifòlium; it has flowered with me this summer, and I have the satisfaction of ascertaining, beyond a doubt, that *L*ìnum *h*ypericifòlium and *L*ìnum usitatíssimum are identical plants: perhaps I shall discover other curious facts of the same kind when the other plants flower. Can any one call this dealing in seeds? I am sure most of us would be angry, if we sent to a draper for flannel, and he should send us cotton. However, we trust that these things will pass away with the good old times. — *K. July*, 1831.

Preservation of Fruits. (p. 368.) — There is much writing, and more mystery, about the preservation of fruits, than, I think, the matter deserves. If we look carefully at the natural process of the germination of seeds, we shall understand the matter clearly. The natural covering of many seeds, as the apple, is an article of food, and, consequently, its preservation an object of solicitude. We frequently observe that if an apple, on falling from the tree, be accidentally buried in the ground, when thrown up on the following spring, it is to all appearance as fresh as when it fell from the tree; the kernels are plump, and ready to burst their coverings, and indeed in a forward state of growth; while the covering (the fruit) is as unfit for food as those fabled apples of the Dead Sea. Whence is this? The preservation of the seed, the first and last law of nature, is perfect; but, as it relates to us, the preservation of the food is imperfect. The absence of air, and a due proportion of moisture, we find are the requisites; but an excess of the latter destroys all flavour in the fruit. How easy, then, to supply the one and avoid the other! In our moist climate, dry sand, or, what is equal, a dry cellar, will afford all that is required. With the same regard to germination, the oily nuts, as walnuts, filberts, &c., may be preserved until germination commences. In these oily nuts the germen is surrounded by a large quantity of an oily amylaceous matter, which readily undergoes a change when exposed to the air: this change unfortunately converts the harmless nut into that formidable terror of good mothers and valetudinarians, *a nut.* Had it been treated with the care and tenderness which are bestowed on other things endowed with life, instead of a terror we should find a harmless gratification: for, Mr. Editor, I am one of those who love a nut, with its appurtenances of chat, fire-side, &c.

I trust that you will not despise these beamings of gastromania, for all our kitchen-garden care tends to the same end; and all this rambling to the axiom, that to preserve the fruit (covering according to purists) we must preserve the germen. I trust that my lax language will not call down on me the wrath of the botanical physiologist, for, to appease him, I will confess that it would have been easier to have used his terminology. — *K. July,* 1831.

Mr. Gorrie's proposed Formulary for a Meteorological Journal. — Sir, In your Number for April last (p. 231.) I notice a proposition to establish communicating observatories; one in the south, one in the middle, and a third in the north of Britain; to endeavour to determine some facts in meteorology regarding the extent of the ensuing conformity of weather in the northern part of the island to that of the southern. It has long ago been observed that a general change of weather, especially to rain, after drought, usually takes place in Scotland* about nine days posterior to the same change in the south of England; and from this fact your correspondent, Mr. T. Machray, seems to have inferred the probability of winds and atmospheric changes progressing northward by pulsations. Although to me it appears improbable that such pulsations are other than imaginary pulsations, yet it is to be hoped that these laudable endeavours, from a love of science, will not be "Love's Labour lost." In following the "Will wi' the wisp" of our own fancies, instead of tumbling into quagmires of error, we sometimes stumble upon objects of high value. Our philosophers, however, have perhaps chosen the most intricate and difficult problem in material science; to reduce the caprices of the proverbially fickle and changing wind to fixed law and general principle. A sufficiency of unknown region, however, exists. Our knowledge of facts and causes with regard to atmospheric tides and other connected phenomena, more especially beyond the domain of the trade winds, is very imperfect. The following will afford plenty of amusement: — The extent, contortions, eddyings, and mixings of currents of air. Whether a field of air has received impulse from causes affecting its own volume and gravity, or the volume and gravity of neighbouring fields. Whether the motion of fields of air generally commence to windward or to leeward, or simultaneously throughout. The connection of these movements with electricity, temperature, atmospheric pressure, and the variable gravitation. How far electricity, positive and negative, affects the weight of temperature of air, and its power of solution of aqueous vapour, and power of supporting cloud vesicle. The composition of water in the atmosphere by electric fluid, and its decomposition at the surface of the earth by the oxidation of metals and organic action.

I allude to this subject in order to point out the inutility of an admired philosophic anemometer and formula of Professor Leslie's, proposed to be used at the observatories by Mr. Gorrie. (See p. 231.) Mr. Gorrie states: — "The professor found that the cooling power of a stream of air is proportional to its velocity; and from an algebraic formula we have the following simple rule: — Mark the temperature indicated by a thermometer in the still air; apply the hand to the ball, till the alcohol rises a certain number of degrees; then mark the number of seconds that elapse, till it fall exactly half the number of degrees raised. Raise the alcohol again the same number of degrees, and expose the ball to the full impression of the wind, and mark the number of seconds that it takes to fall half the number of degrees it rose. Divide the number of seconds elapsed in still air by the number of seconds elapsed in the full play of the wind; throw off 1 from the quotient, and multiply by 4½; the product expresses the velocity of the wind in miles per hour." Now I think that one glance of the mind will satisfy any person that this formula, or rather the principle of the formula, is incorrect. Even granting that the cooling power of a stream of air is exactly in proportion to its velocity, which, I consider, remains to be proved, yet from the slow heat-conducting power of the glass cover of the alcohol, and the not immediately regularly throughout cooling of the alcohol itself as the velocity continues to increase, the cooling must proceed in a slower ratio than the velocity; and this disproportion will be considerable where the glass is thick, the alcohol in considerable volume, and the velocity very great. For example, take extreme cases: suppose the alcohol covered with so bad a heat-conducting envelope that it shall require one hour (3600 seconds) in still air to fall from 60° to 50°, the air itself being at 40°; can we believe, that, in the case of the current of air being 85½ miles per hour, the alcohol would cool twenty times faster (in 180 seconds) within this almost impervious to heat envelope than in the still air? In this last case, the outside of the cover would immediately be cooled down almost to the temperature of the atmosphere, and the rapid current of wind would extract very little more heat than the calm air extracted. I am aware that the difference of temperature between the surface of the glass and the interior fluid comes into account in both cases, as well when the air is still (that is, when there is only a slight current upward, by reason of the surrounding air being diminished in density by the expansion caused by the heat given out by the glass), as in the full play of the wind; but in the former case, from the slower cooling, the difference of temperature between the surface and interior is very small, and in the latter, especially should the cooling be rapid, the difference is considerable. Different instruments will also require different allowances for radiation, and the loss of heat by radiation with the same instrument will also be variable, affecting the results. Granting Professor Leslie's premises, this anemometer could only be correct should the outside of the glass maintain equal temperature with the whole interior of the mass; and should the very small loss of heat by radiation go on increasing in the same proportion as the loss by contact, which is impossible. Let it be understood, that I have no knowledge whatever of Professor Leslie's anemometer but through your Magazine. (p. 281.) I think it impossible but that the above-stated causes of error must have been obvious to him.

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* In the low country of Scotland, having mountains to the northward, I have observed that a change to rain, proceeding northward from England, oversteps this low country to the mountains, and afterwards returns southward down upon the low country.

As distinguishing epithets for different velocities of air, the following terms are pretty generally understood, perhaps definitely enough for general purposes: —

Gentle breeze - - - = 5 miles per hour.
Breeze - - - - = 10
Smart breeze - - - = 20
Gale - - - - - - = 30
Hard gale - - - - = 45
Tempest or storm - - = 60
Violent tempest or storm - = 80

We dismiss hurricane to lower latitudes. The sense may be cultivated to appropriate these terms pretty correctly to determinate velocities of air, by frequently taking a commanding situation, overlooking a country, the distance between whose remarkable lines or points is known to you, and while the sun is shining and clouds are floating along the lower fields of ether, to observe the time the shadows of the clouds move over known distances.

The exact velocity of the wind may, of course, be measured by means of a small balloon, regulated, as near as possible, to the weight of the lower atmosphere, or by a few down feathers, attached together by light threads, forming an open tuft. This plan would require two operators on a large open field, placed at a measured distance from each other in the line of the wind, with muskets or flags to make signals to each other. The minutiæ of doing so need not be described. It has been attempted to construct a measure of the velocity of wind by measuring its impelling power (momentum); but, as the impelling power is the product of the density and velocity, some means of estimating the correction for the greater or less density is requisite. Were the density estimated under the different temperatures and atmospheric pressures, an anemometer on this principle would probably be the most convenient and correct. I have often found a cold freezing wind have greater momentum upon the sails of a vessel, than a warm summer wind, apparently to the senses, of no less velocity. — *Author of* "*Naval Timber*" [see p. 78.]. *May* 17. 1831.

Eschschóltzia califórnica a hardy Perennial, and V*erbèna chamædrifòlia almost hardy.* — Sir, I have pleasure in confirming your statement, p. 342., in your review of Maund's *Botanic Garden* for March last, that the Eschschóltz*ia* is of perennial duration. A seedling plant flourished and flowered very luxuriantly with me last year, and in November I covered it over with dry straw: in February last I uncovered it, and found it already about to leaf. It is now a very fine plant, and will very shortly be in flower again. I have several fine seedlings raised this spring some I will leave unprotected through next winter, to see if they will survive, as you have known them do; and others I will plant on rockwork, to the end you suggest. *V*erbèna *c*hamædrifòlia, also, survived last winter, with only the protection applied to the Eschschóltz*ia.* I am, Sir, yours, &c.—*Thomas Edgeworth. Wrexham, June* 8. 1831.

To "planting" we greatly prefer *sowing* the Eschschóltz*ia* at once where wanted (not even in pots, to be thence turned out), and discarding the supernumerary plants as they arise: one at a place is sufficient. The plant has a fleshy, perpendicular, spindle-shaped rootstock, and, like many plants so circumstanced, is so checked by transplantation, as to occupy days, and sometimes even weeks, in recovering. This loss of time, and the miserable aspect of the plant during this time, are both prevented by the inconsiderable expense of a few additional seeds, and the timely thinning out above recommended. — *J. D.*

The Monteath Pear. — Sir, In reply to Mr. James Smith's remarks on my account of the John Monteath pear tree at Ormiston Hall (p. 239.), I have to thank him for the tender concern he manifests about my "feelings," and to assure him that they are still unhurt by his remarks.

> "A moral, sensible, and well-bred man
> Will not affront me, and no other can."

Had Mr. Smith applied to me for an explanation before he sent his remarks for publication, I would have referred him to the polite and intelligent gardener at Ormiston Hall (Mr. Pearson); to whom, I have no doubt, it would have afforded much pleasure to have communicated, either to the "noble Earl of Hopetoun," to His Lordship's gardener (Mr. James Smith), or to the noble lady, his correspondent of "Oct. 1830," the same particulars which he very obligingly communicated to myself and friends; the substance of which formed the whole of my communication respecting that pear tree: and I think it would be difficult to point out how any person could have any possible interest in misleading Mr. Pearson or myself on such a subject. It may be very true that Mr. Smith "has conversed with many old people about this tree;" but, unless he can prove himself to be the sole repository of every word that ever was said about it, I do not see any right he has to assume that "no such account as the one given by Mr. Gorrie was ever heard of." This looks like "cutting before the point." I have no doubt that Mr. Pearson is able and willing to point out the sources of his information. It will then be for Mr. Smith and others to attach any degree of credit they may think proper to the traditionary tale; the truth of which, however, stands little affected by any thing Mr. Smith has hitherto advanced to the contrary. That this, or some other John Monteath pear tree, is or was a seedling, Mr. Smith will readily admit; that size of trees is no fair criterion of age, he has too much practical experience not to allow. Indeed, it appears rather inadvertent in a professional man to press this as an argument into the service; that the tree at Cramond House "must be the senior." Must I remind Mr. Smith of the homely adage, that "every tree in the wood does not grow alike?"

The anecdote respecting "John Earl of Hopetoun" and his tenant at Byers proves, at least, that a little selfishness was common to landlord and tenant in the days of yore, as well as in modern times; and now that we are sent all the way to "Chiswick" to see one of Johnnie's progeny, one might be led to infer that the family are far scattered, and that fruit "held in estimation by the Earls of Hopetoun" of the olden time are disregarded by the sons of men in our day and generation. Are there no young trees of this esteemed variety, that might be "pointed out" to us in our next "jaunt," at Hopetoun Gardens? There is one at Annat Gardens, which I shall be happy to point out to any of my brethren who may not have leisure to visit Chiswick, and who may deem the sight of any importance. For my own part, the question as to when or where this "venerable tree" came into the world, I would have considered of little earthly consequence to any of its inhabitants, except to gratify a harmless curiosity: but, now that Mr. Smith has been pleased to contradict, in positive terms, and without the least qualification, what I was informed and communicated on the subject, I confess I do feel a wish that the question were in some way or other set at rest, and I think this can be done by a very simple process. If the old tree at Ormiston Hall, and the one to which Mr. Smith alludes as "senior" at Cramond, shall each have a few of their roots cut at 6 or 8 ft. from the stem, and the points of these roots placed near the surface, young shoots will be produced: and if either of these trees is the original seedling, the foliage and habits of the young shoots will have a striking resemblance to the young Monteath pear trees; and grafts taken from them will produce fruit similar to those of the old tree, if wrought on standards. As only one of these trees can be expected to produce fruit and foliage having the Monteath family-likeness, the other will produce fruit, wood, and foliage something similar to the stock on which the tree was grafted. I hope Mr. Pearson and Mr. Smith will attend to this, and communicate the result through the medium of your Magazine. I am aware that I am not offering any thing that is new to either of my above-mentioned professional brethren, in the above suggestion. I am also aware that some objections may be made to the experiment, on the principle that the graft affects the stock; but to this objection, if it be made, I have to oppose my own experience in researches of that nature.

I agree with Mr. Smith that the young Monteaths grow upright, with strong young shoots, and differ in habit from the old trees. This is also peculiar to many prolific varieties of pear trees. Old John, by all accounts, has borne many a heavy load of fruit, which may have contributed to give his shoulders a little bend. My friend, Mr. Smith, if he allow me to call him so, is, as well as myself, advancing in the vale of years, and we gradually leave off some of our youthful habits, as well as John Monteath. Mr. Smith has produced some healthy mental shoots in the days of his youth; I hope and wish his ideas may continue to shoot vigorously till a ripe old age. I am, Sir, yours, &c. — *Arch. Gorrie. Annat Gardens, April* 19. 1831.

Hybrid Melons. — Sir, In Vol. VI. p. 502. a query of mine occurs on the impropriety, as it had appeared to me, of melons, cucumbers, gourds, and pumpkins being allowed, in otherwise very well regulated gardens, to grow all together; as I considered their respective produce must be hybridous. In Vol. VI. p. 727. J. C. K. replies, as I have considered, very ably and satisfactorily, to my question, by assuring us the *C*ucurbitàceæ would not engender in the manner I had represented, and that, consequently, no hybrids could be the result. I was so satisfied with the answer as to have entirely given up my preconceived opinion to that of this intelligent correspondent; when, to my very agreeable surprise the other day, in one of the *salons* of Paris, I met, among many other of our English works, with your Magazine, and at page 514. Vol. IV. with the following remark: — "Exhibited to the Horticultural Society of London on the 7th of October, 1828, a fruit raised from the seed of a cucumber, *impregnated* by the Maltese melon, by Mr. John Oliver, gardener to Earl Craven." Now, Sir, I presume to pronounce this a decidedly unqualified hybrid, and my previous opinion upon the subject no longer hypothetical. The point at issue now lies between Mr. Oliver and J. C. K. It is to be hoped, for the benefit of the science and the instruction it will afford to men of the profession generally, that these two gentlemen will exchange opinions upon the subject through your Magazine. — *P. Lauder. Cardiff, May* 23. 1831.

As an additional fact subservient to the deduction of some conclusive opinion on this interesting subject, see Mr. Robert Mallet's communication, p. 87. of the current volume. — *J. D. for Cond.*

Mode of training the Vine at Thomery, near Fontainebleau. — Sir, In your abridgment (Vol. V. p. 286.) of my paper on thiss ubject, as published in the *Transactions of the London Horticultural Society* (vol. vii.), you say the spurs should be shortened to "one inch:" it is "one line" in the original. The error is of some importance. Yours, — *John Robertson. Kilkenny, January* 30. 1831. [A line is the tenth of an inch.]

Art. IV. *Horticultural Society and Garden.*

July 19. 1831. — The Chairman announced that Part I. of Vol. I. of the New Series of the *Transactions* was ready for delivery.

Read. A Paper on the Preparation of Plants for, and Management of during, a Voyage from India; by N. Wallich, M.D. C.M.H.S.

Exhibited. Forced peaches and nectarines from Mr. Thomson, gardener at the Grange, Hants; these were very fine specimens. Black Prince, and New Dutch Sweetwater grapes, from C. Webb, Esq. A drawing of *G*ladìolus psittacìnus, from Mr. John Miller of Bristol. Forced peaches, Noblesse, French Mignonne, and Scarlet Admirable, and Elruge nectarines, from Mr. W. Lindsay, gardener at Chiswick House; of these, the Noblesse peaches were particularly beautiful and well grown. A new hardy species of Lobèl*ia*, from Messrs. Low and Co. of the Clapton nursery.

Also, from the Garden of the Society. Flowers. Coreópsis lanceolàta, Pentstèmon pulchéllus and atropurpùreus, *V*erbèna *c*hamædrifòlia, *S*piræ`a ariæfòlia, Garden roses, Eschschóltz*ia* califórnica, *M*álva miniàta, *V*erbèna Aublèt*ia*; Œnothèra speciòsa, bìfrons, Lindley*àna*, quadrivúlnera, decúmbens, sinuàta, odoràta (new var.), and vimínea; Galárd*ia* aristàta and bícolor, Scutellària variegàta and lupùlina, *M*ímulus moschàtus, Hollyhocks, Didíscus cærùleus, Calceolària bícolor. — Fruit. Black Naples currant, New Enville pine-apple, Marseilles fig, Black apricot, Mr. Knight's No. 3. red currant; Gooseberries, viz. Red Champagne, Small dark rough red, Red Warrington, Yellow Champagne, Golden drop, Rumbullion, Early green hairy, White crystal, Pitmaston green gage, Melling's crown bob, Boardman's British crown, Lomax's victory, Parkinson's laurel, Massey's heart of oak, Edwards's jolly tar, Woodward's whitesmith, Beaument's smiling beauty, Wilmot's early red, Eckersley's jolly printer, Clewarth's white lion, Andrews's royal rock-getter, Haywood's invincible, Saunders's Cheshire lass, Graves's Smolensko, Marchioness of Downshire, Red Turkey, Taylor's bright Venus, Late green, White globe, Green walnut.

August 2. — *Read.* A Letter on the Growing of Pine Plants in Moss; by J. R. Neame, Esq. F.H.S.

Exhibited. A black Antigua pine-apple grown in moss, from J. R. Neame, Esq.; this was a very handsome though small fruit, and remarkably high-flavoured. A melon grown in a pit heated with hot water; weight 3 lbs. 14 oz.; from R. H. Roundell, Esq. F.H.S. *C*aprifòlium japónicum from Mr. Tate's nursery, Sloane Street.

Also, from the Garden of the Society. Flowers. *A*gératum mexicànum; *V*erbèna Aublèt*ia*, pulchélla, and *c*hamædrifòlia; *P*yrèthrum inodòrum (double) [this is the plant which in some gardens is erroneously named Matricària grandiflòra]; Œnothèra tetráptera, vimínea, Lindley*àna*, bìfrons, speciòsa, sinuàta, and odoràta (new var.); Coreópsis lanceolàta and Atkinson*iàna*, Eschschóltz*ia* califórnica, Clárk*ia* pulchélla; Pentstèmon atropurpùreus, pulchéllus, campanulàtus, and Richardsòn*ii*; *P*hlóx paniculàta álba, Carolìna, and bícolor; Hollyhocks, Justíc*ia* cárnea, Fúchs*ia* virgàta and microphýlla Trachymène cærùlea [the same as Didíscus cærùleus], Galárd*ia* aristàta, Georginas, Ten weeks stock. — Fruit. Gooseberries: Rumbullion (great bearer), Rough red, Bratherton's huntsman, Perring's evergreen, Red Champagne, Leigh's fuddler, Leigh's rifleman, Collier's jolly angler (good late sort), Farrow's roaring lion, Eckersley's jolly printer. Pears: Citron des Carmes, Beurré Kirke (of middling quality), Passe-Madeleine (great bearer, quality inferior), Calville blanche d'été apple, Late duke cherry (if protected by nets, would remain good for another month), Barnet raspberry (second crop).

August 16. — *Read.* A Paper on the Cultivation of the Vine; by Mr. John Smith, gardener to Dykes Alexander, Esq., St. Matthew's, Ipswich: communicated by the Ipswich Horticultural Society.

Exhibited. Thirty-eight new seedling Georginas, three seedling Chelones, one new variety of Œnothèra, and other herbaceous plants, from Mr. Garnier's, Wickham, Hants: among these a variety of Digitàlis ferrugínea was particularly handsome; some of the Georginas were also beautiful. A sweet melon of Ispahan, from John Motteux, Esq.; this was a small specimen, but true and good.

Also, from the Garden of the Society. Flowers. Coreópsis Atkinson*iàna*, Œnothèra odoràta (new var.); *V*erbèna Aublèt*ia*, pulchélla, and *c*hamædrifòlia; Galárd*ia* bícolor and aristàta, Pentstèmon campanulàtus, Trachèlium cærùleum, Clintòn*ia* élegans, Argemòne mexicàna álba, Heliánthus petiolàris, Alstrœmèr*ia* acutifòlia, Calámpelis scàbra, Stocks, Hollyhocks, Georginas. — Fruit. Pears: Windsor, French jargonelle, Crawford, Passans de Portugal, Lawrence, Sanguinole, De Suisse. Apples: Early Fulwood, Longville's kernel, Summer Stibbert, French codlin. Plums: Gisborne's, Blue gage. Peaches: Grosse mignonne, Pourprée hâtive, Early red. Brunswick Fig. Onions: Tripoli, White Spanish.

Art. V. *Covent Garden Market.*

	From			To		
	£	s.	d.	£	s.	d.
The Cabbage Tribe.						
Cabbages, per dozen:						
White - -	0	0	9	0	1	6
Red - -	0	3	0	0	4	0
Plants, or Coleworts -	0	2	0	0	3	0
Cauliflowers, per dozen -	0	2	0	0	4	0
Broccoli, Cape, per bunch	0	0	6	0	1	0
Legumes.						
Peas - per half sieve	0	1	6	0	2	6
Peas - per sieve	0	3	0	0	5	0
Kidneybeans, per ½ sieve -	0	1	6	0	2	6
Scarlet do. - - -	0	1	6	0	2	0
Tubers and Roots.						
Potatoes - per ton	2	10	0	3	10	0
Potatoes - per cwt.	0	2	6	0	3	6
Potatoes - per bush.	0	1	6	0	2	0
Turnips, White, per bunch	0	0	1½	0	0	2
Carrots, per bunch:						
Old, - - -	0	0	5	0	0	6
Horn - - -	0	0	3	0	0	4
Red Beet, per dozen -	0	1	0	0	1	6
Horseradish, per bundle -	0	2	0	0	4	0
Radishes:						
Red, per dozen hands (24 to 30 each) - -	0	0	6	0	1	0
Turnip, White, per bun.	0	0	1	0	0	1½
The Spinach Tribe.						
Spinach per sieve -	0	1	0	0	1	6
Spinach per half sieve -	0	0	6	0	1	0
Sorrel, per half sieve -	0	1	0	0	0	0
The Onion Tribe.						
Onions:						
Old, per bushel - -	0	6	0	0	8	0
For pickling, per ½ sieve	0	4	0	0	5	0
Leeks, per dozen bunches	0	1	6	0	0	0
Garlic, per pound - -	0	0	8	0	0	10
Shallots, per pound - -	0	0	9	0	1	0
Asparaginous Plants, Salads, &c.						
Lettuce, per score:						
Cos - -	0	1	0	0	1	6
Cabbage - -	0	0	9	0	1	0
Endive, per score, - -	0	0	9	0	1	6
Celery, per bundle (12 to 15)	0	0	9	0	1	6
Small Salads, per punnet -	0	0	2	0	0	3
Watercress, per dozen small bunches - - -	0	0	6	0	0	0
Burnet, per bunch -	0	0	2	0	0	0
Pot and Sweet Herbs.						
Parsley, per half sieve -	0	1	0	0	0	0
Tarragon, per dozen bunches	0	4	0	0	0	0
Chervil, per punnet -	0	0	6	0	0	0
Fennel, per dozen bunches	0	2	0	0	0	0
Thyme, per dozen bunches	0	2	0	0	0	0
Sage, per dozen bunches	0	2	0	0	0	0
Mint, per dozen bunches	0	2	0	0	0	0
Peppermint, per doz. bunch.	0	2	0	0	0	0

	From			To		
	£	s.	d.	£	s.	d.
Marjoram, per doz. bunches	0	2	0	0	0	0
Savory, per dozen bunches	0	2	0	0	0	0
Basil, per dozen bunches -	0	2	6	0	3	0
Rosemary, per doz. bunches	0	4	0	0	0	0
Lavender, per doz. bunches	0	4	6	0	6	0
Tansy, per dozen bunches	0	2	0	0	0	0
Stalks and Fruits for Tarts, Pickling, &c.						
Sea Samphire, p. small pun.	0	0	6	0	0	0
Vegetable marrow, per doz.	0	0	6	0	1	0
Gourds, per dozen - -	0	1	6	0	2	0
Tomatoes, per sieve -	0	8	0	0	10	0
Capsicums, per hundred -	0	2	0	0	4	0
Edible Fungi and Fuci.						
Mushrooms, per pottle -	0	0	6	0	1	0
Morels, per pound - -	0	14	0	0	0	0
Truffles, per pound:						
English - - -	0	14	0	0	0	0
Foreign - -	0	16	0	0	0	0
Fruits.						
Apples, Dessert, per ½ sieve:						
Downton Pippin - -	0	6	0	0	0	0
Franklin's Pippin -	0	6	0	0	8	0
Ribston Pippins -	0	8	0	0	0	0
Kerry Pippins - -	0	8	0	0	10	0
Apples, Baking, per bushel	0	5	0	0	8	0
Pears, Dessert, per ½ sieve:						
Williams's - - -	0	7	0	0	10	0
Bergamots - - -	0	6	0	0	7	0
Beurrée - - -	1	0	0	0	0	0
Gansell's - - -	1	4	0	1	10	0
Peaches, per dozen -	0	1	6	0	3	0
Nectarines, per dozen -	0	1	6	0	3	0
Apricots, per dozen -	0	1	6	0	2	0
Almonds, per peck -	0	6	0	0	0	0
Plums, Dessert, per punnet	0	1	0	0	1	6
Damsons, per half sieve	0	3	0	0	5	0
Damsons, per bushel	0	8	0	0	12	0
Baking per half sieve -	0	3	0	0	4	0
Mulberries, per gal. (2 pots.)	0	1	0	0	1	6
Elderberries, per bushel -	0	5	0	0	6	0
Walnuts, per bushel -	0	8	0	0	10	0
Filberts, English, per 100 lbs.	6	0	0	7	10	0
Pine-apples, per pound -	0	5	0	0	8	0
Grapes, per pound:						
Hot-house - - -	0	1	6	0	3	0
From the open wall -	0	0	6	0	0	8
Figs, per dozen - -	0	1	6	0	3	0
Melons, per pound -	0	0	6	0	1	0
Cucumbers:						
Pickling, per hundred	0	0	9	0	1	6
Pickling, per thousand	0	5	0	0	12	6
Oranges, per dozen -	0	2	0	0	6	0
Lemons per dozen -	0	0	9	0	2	0
Lemons per hundred	0	5	0	0	16	0
Sweet Almonds, per pound	0	3	0	0	4	0
Brazil Nuts, per bushel -	0	12	0	0	16	0
Barcelona, per peck -	0	6	0	0	0	0

As I premised in my former observations, the effects of the severe frosts in May last are now more seriously felt. Our supplies of every sort of fruit usual at this season (except peaches, nectarines, apricots, grapes, &c., from the walls and houses) have been unusually short. In some of my former remarks I endeavoured to make it appear that, in all cases where the prices were by any causes raised beyond what may be considered the real value, a reaction has invariably taken place. This has occurred frequently this season; added to which, the natural price occasioned by a scarcity has induced many persons to forego the enjoyment of fruits. The consequences have been considerable fluctuation and very great uncertainty; nevertheless, throughout the summer, the prices may be considered good. Since my last, we have had, on the whole, rather favourable weather for general culture; and the fine weather has allowed the growers to bring their fruit to market in good condition, which has contributed materially to its value, and has not diminished its consumption; but the alarm and apprehension of cholera have prevented, very generally, the use of plums and all other stone fruit. Jargonelle pears have been fine and large, which may arise from the crop having been very thin on the trees; of Windsors there have been but few, and those of indifferent quality; of summer bergamots but few are cultivated, rarely bearing well; of lammas pears we have had a tolerable supply, principally from Cambridgeshire, which, in the absence of better sorts, have sold well. Of Williams's, or the summer bon chrétien, we have had but few; but not being in such esteem as the jargonelle, it never realises the same value.

Apples, especially the summer and early autumn varieties, are very short in supply; but the prices have induced many to send them to market before the proper season. A few red Quarrendens have been sent, but principally from the immediate neighbourhood of London. Some Emperor Alexanders have also been seen, but not in any quantity, or of the usual fine and showy appearance they generally assume at this season. Hawthorndens, which are usually abundant, have proved in many cases a total failure.

Of plums the crop has been very partial; in some situations altogether deficient, and in others very good; so that, on the whole, we have had a tolerable quantity. The principal varieties furnished to our market are, the early and old Orleans; the green gage and several seedling varieties of it, but none of which have the least pretensions to its peculiarly fine flavour. Some very fine Goliath plums, of large size and beautiful colour, have been sent; but their flavour is by no means equal to that of the Orleans.

Peaches and nectarines have been supplied in good quantities and at reasonable prices. We have had apricots in tolerable supply from the neighbourhood of Oxford, and elsewhere. Grapes from the hot-houses have been plentiful, and of excellent quality, at very moderate prices; the crops on the open walls are also good, and, should the present fine weather prevail for a few days, will ripen well, and be in good condition for the table, or for making wine.

Walnuts and mulberries were, in most cases, so completely destroyed as to forbid any expectation of supply; the former have been substituted by an ample importation of most excellent quality from Ostend and other places, which have met with a ready sale.

From the frequent prevalence of rain during the summer, and the intervening fine weather, vegetables have been in good supply. Onions, cucumbers, carrots, turnips, cabbages, coleworts, spinach, &c., are furnished in large quantities, with the prospect of ample supplies throughout the winter.

Potatoes are reported to be an excellent crop, and in great breadth; consequently, we may expect the markets to be well supplied at a moderate rate. This vegetable, despite of Mr. Cobbett's aversion to it, appears to be one of the most important articles of culture known at present in this country.

Covent Garden, Sept. 16. 1831. G. C

ART. VI. *Provincial Horticultural Societies.*

Our Reports of the Provincial Societies. — I beg leave most cordially to subscribe to the opinion you have advanced in reply to Mr. Pope, p. 238. However prolix the details of the exhibitions of these Societies may be, you cannot abandon them; for your reports are the only means the different societies have of knowing each other's proceedings, by which a constant and reciprocal emulation is excited.

The Florist's Gazette I am very willing to acknowledge an excellent work; but, as you remark, its circulation is limited to two or three northern counties; whereas your Magazine not only extends all over England, but to the Continent, and, as I was lately informed at Paris, is to be met with in several parts of Holland and Germany: besides, your own interest must be a first consideration, and I know many members of various horticultural societies who are great admirers and supporters of your Magazine, who would immediately abandon it if Mr. Pope's wishes were complied with. I am, Sir, yours, &c. — *P. Lauder. Cardiff, May* 23. 1831.

The same Subject. — I am glad to see, by your remarks, p. 238., that you do not mean to abandon the reports of provincial horticultural exhibitions. I consider them very interesting, and as I contribute myself to two or three "*Expositions des fleurs et fruits*" annually in this country, I am always anxious to compare the choicest plants on both sides of the water.— *W. H. W.* 43. *Rue de Berlin, St. Omer's, August*, 1831.

We present the two preceding communications as including the "end and aim" of similar additional ones; and we present them here that they may appear in closer union with their subject. They demonstrate that we cannot discontinue these reports: and they do more; they supply valuable hints to the secretaries and others of provincial horticultural societies, who provide the reports of their respective shows for the district newspapers, from which our General Report is compiled. They will hence perceive that their individual reports are integral parts of a national whole, and that that whole is deemed a just criterion of Britain's progress in horticulture and floriculture, and also that the respective details of that whole become so many given points of comparison, by which our foreign readers estimate the merits of the productions of themselves and their countrymen. It is pleasant to calculate also the uses of lists like the following to amateur cultivators, whether of flowers or of fruits. In the case of flowers it will be seen that Erythrìna laurifòlia * and Nèrium spléndens have each won several prizes, and the amateur will, in consequence, if not already possessed of these plants, forthwith procure and cultivate them; the like effect in other cases, according to the circumstances, may be produced. We have to complain that in too many of the reports, the omissions of the names of the winning articles have been too numerous; there have been, 1st prize to Mr. A.; 2d prize to Mr. B.; 3d prize to Mr. C., and so on: all which, though duly gratifying to the parties themselves, in their own immediate neighbourhood, loses all its interest to those devoid of the pleasure of the acquaintance of Messrs A., B., C.: the name of the production, and a brief notice both of its qualities, if peculiar, and the culture, if peculiar, by which it has been rendered extraordinary, would be of universal interest. These, and other points that we need not enumerate, we respectfully submit to the consideration of our provincial friends. In the meantime, we have kept out of the present Number, and shall in future keep out, all prizes, the sorts gaining which are not particularised.

General Rules for the Adjudication of Prizes. — In their adjudication of prizes horticultural societies will do well to discriminate as much as possible between the result of chance and the result of skill; for it should ever be borne in mind, that the merit for which a prize ought to be awarded exists not in the production but in the producer. The best dish of filberts in August, or of cherries in July, gathered, perhaps, from standard trees planted twenty years ago, may imply but slender merit in the individual who now produces them. In every horticultural production, therefore, whether raised for use, luxury, or beauty, the merit of the exhibitor is to be estimated by the degree of science, care, and skill, evinced in its cultivation. There is considerable difficulty in appreciating these qualities; because in very many cases, probably in most, they can only be *inferred* from the productions themselves. The Norfolk and Norwich Horticultural Society has adopted a standard of judgment at once comprehensive, brief, and perspicuous, for the regulation of those gentlemen who may be selected to award its prizes. We trust that Colonel Mason will not be offended if we associate his name with a production for which the Society is much indebted to him; and the public will thank us for thus giving it a more extended circulation.

"In order to facilitate the method of judgment in awarding prizes to the horticultural exhibitants, the following are the governing rules by which, in future, all fruits, flowers, and vegetables will be considered more or less deserving distinction. As the said rules are conceived to unite all the good properties inherent in either fruits, flowers, or vegetables, they are hereby designated 'The Unities.' Exhibitants will therefore, by these 'unities,' possess data by which they will, at one view, know with what chance of success they compete for prizes:—

"*The Unities for Fruits comprise Eight Properties.* 1. Rarity of sort; 2. Precocity of season; 3. Magnificence of size or weight; 4. Fineness of colour; 5. Excellence of quality; 6. Extent of quantity sent for exhibition; 7. Ingenuity of culture; 8. Cheapness of production.

"*Example in the Orange.* 1. Aurántia nòbilis (very rarely met with); 2. April (usual time, August); 3. Circumference, on an average, 7 in.; weight, 8 oz.; 4. Deep yellow, with russet patches on the sides; 5. Thin-skinned, juicy, quick, and saccharine; 6. Five in number; 7. Heat applied in March, rising from 55° to 80°; 8. Hot-water pipes, by Weeks's patent.

"*The Unities for Flowers consist also of Eight Properties.* 1. Rarity of sort; 2. Precocity of season; 3. Magnificence of size; 4. Fineness of colour; 5. Beauty of form; 6. Delicacy or strength of odour; 7. Ingenuity of culture; 8. Cheapness of production.

"*Example in the Carnation or Picotee.* 1. Seedling; 2. July; 3. Diameter, 3 in.; 4. Yellow Picotee; ground primrose, clear from spots; edges streaked with crimson, dark and distinct; 5. Petals beautifully pinked; calyx entire; guard petals well reflexed; centre petals perfectly trussed up to the centre; stem 24 in., strong, and scarcely needing a stick; 6. But small odour; 7. Half yellow loam, half horse-droppings, and a little sea sand; 8. Cold frame in winter.

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* Erythrìna laurifòlia is, in gardens not a few, erroneously called E. Crísta gálli; hence, where E. Crísta gálli occurs in the following lists, it probably signifies in most cases E. laurifòlia, which blooms far more freely than E. Crísta gálli. See Mr. Elles's directions for cultivating and propagating this superb plant, E. laurifòlia, p. 456.

" *The Unities for Vegetables consist of Eight Properties.* 1. Rarity of sort; 2. Precocity of season; 3. Magnificence of size or weight; 4. Beauty of colour or of blanching; 5. Perfection of form and excellence of quality; 6. Extent of quantity sent for exhibition; 7. Ingenuity of culture; 8. Cheapness of production.

" *Example in the Cucumber.* 1. Green Turkey; 2. First week in March; 3. 18 in. long; 4. Uniform green, with fine bloom; 5. Thin, straight, and seedless; 6. A brace; 7. Hot-water pipe, Weeks's patent, average heat 70°; 8. Usual culture as to soil and frames." (*Norfolk Chronicle.*)

LANCASHIRE.

Rochdale Floral and Horticultural Society.—*July* 7. 1830. **Prizes were awarded as follows:** —

Plants. Stove: 1. Hedýchium angustifòlium, and 2. Hæmánthus multiflòrus, John Entwisle, Esq.; 3. Thunbérg*ia* alàta, George Priestley, Esq.; 4. Erythrìna *C*rísta gálli, John Entwisle, Esq. Hardy Shrubs: 1. Calámpelis scàbra, Mr. Henry Midgley; 2. *C*ýtisus nígricans, Mr. Robert Robertson; 3. Azàlea glaúca álba, Mr. James Falkner; 4. Kálm*ia* angustifòlia rùbra, John Entwisle, Esq.; 5. Potentílla floribúnda, Mr. John Ecroyd; 6. *R*hododéndron hirsùtum, Mr. Alexander Fothergill. Green-house: 1. Calceolària rugòsa, Mr. Robert Robertson; 2. Selàgo spùria, John Entwisle, Esq.; 3. *V*erbèna *Melíndres*, George Priestley, Esq.; 4. *L*ýchnis coronàta, Clement Royds, Esq.; 5. Calceolària corymbòsa, George Priestley, Esq. Herbaceous: 1. *D*elphínium grandiflòrum plèno élegans, Mr. James Falkner; 2. Campánula macrántha, Mr. Robert Scholfield: 3. Galárd*ia* bícolor, Mr. John Ecroyd; 4. Cypripèdium spectábile, Mr. Robert Scholfield; 5. *L*ýchnis fúlgens, Mr. Henry Midgley; 6. *A*nemòne palmàta, Mr. Joseph Tate; 7. Pentstèmon digitàlis, Mr. John Whitworth; 8. Pentstèmon ovàtus, Mr. Henry Midgley; 9. *G*èum coccíneum, Mr. Robert Robertson; 10. Prímula cortus*öides*, Mr. James Falkner.

Flowers. Pinks. Purple-laced: 1. Suwarrow, Mr. Alexander Fothergill; 2. Duke of St. Alban's, Mr. James Falkner; 3. Claudius, Mr. John Etches; 4. William the Fourth (seedling), 5. Tendresse, 6. Lustre, 7. Comet, and 8. Seedling, Mr. James Falkner. — Red-laced: 1. Mars, Mr. James Falkner; 2. Rosea, Mr. Thomas Smith; 3. Humphry Cheetham, Mr. John Etches; 4. Sir Robert Peel, and 5. Bonny Bess, Mr. James Falkner; 6. Cato, Mr. Jonathan Ashworth; 7. Princess Charlotte, Mr. John Etches; 8. Reine des Roses, Mr. James Falkner. — Black and White: 1. Cicero, Mr. Thomas Smith; 2. Queen of June, Mr. Jonathan Ashworth; 3. Moscrop's Atlas, Mr. James Tweedale; 4. Lord Bagot, Mr. John Etches; 5. Beauty of Flora, 6. Commerce, and 7. Eclipse, Mr. James Falkner; 8. Venus, Mr. Edward Ball. — Ranunculuses. Striped: 1. Oressus, 2. Unknown, 3. Tortilla, 4. Mélange des Beautés, and 5. Œillet Parfait, Mr. J. Tate. Yellow-edged. Spotted: 1. Orange Brabançon, Mr. J. Cheetham; 2. Isodorus, and 3. Sultan d'Or, George Priestley, Esq.; 4. Julius, Mr. James Falkner; 5. Mr. James Cheetham. Dark Self-coloured: 1. Naxara, Mr. James Cheetham; 2. Quixote, Mr. James Falkner; 3. Gunner, George Priestley, Esq. Grey or Purple-edged: 1. Variat, George Priestley, Esq.; 2. Duke of Northumberland, Mr. James Falkner; 3. Nomius, Mr. John Whitworth. White-edged Spotted: 2. Tendresse, Mr. Joseph Tate; 3. La Téméraire, George Priestley, Esq.; 5. Benjamin, Mr. James Falkner. Light Self-coloured: 1. De Tronelutin [?], George Priestley, Esq.; 3. Golconda, Mr. James Cheetham. — Pelargoniums. Grown with Green-house: 1. De Vere, 2. Anne Boleyn, and 3. Spectábile maculàtum, G. Priestley, Esq.; 4. Lady Essex, and 5. Prince of Orange, John Entwisle, Esq. Grown without Green-house: 1. Davey*ànum*, Mr. James Taylor; 2. Victory, Mr. Henry Midgley; 3. Macránthon, and 4. Augústus coccíneus, Mr. James Cheetham; 5. Prince Leopold, Mr. James Taylor. — Roses. Red or Blush: 1. Prince Consignor [?], and 2. Bazaar Delechina [?], Mr. James Falkner. Marbled or Striped: 1. Gladiator, Mr. James Falkner; 2. York and Lancaster, Clement Royds, Esq. Dark: 1. Pluto, Clement Royds, Esq.; 2. Tuscany, Mr. Robert Robertson. White: 1. Provence, Mr. Alexander Fothergill. Monthly: 1. Lady Ibbetson, Mr. Joseph Tate.

Fruit. Grapes: 1. Lombardy, John Entwisle, Esq.; 2. Sweetwater, Joseph Fletcher, Esq.; 3. Black Hamburgh, Clement Royds, Esq. — Strawberries, Keen's Seedling: 1. Mr. Robert Robertson.

Culinary Vegetables. Peas: 1. Superfine Early, Mr. Joseph Tate; 2. Early Frame, Mr. Joseph Aston. — Cucumbers: 1. Incomparable, Mr. John Ashworth 4. Green Levant, Mr. Robert Robertson. — Potatoes. Kidney: Unwin's Kidney: 1. Mr. Alexander Fothergill; 2. Mr. Robert Robertson; 3. Mr. Joseph Aston. Round: 1. Golden Dwarf, Mr. John Ecroyd; 2. Golden Dwarf, Mr. Robert Robertson; 3. Fox's Seedling, Mr. John Ecroyd. — *Alexander Fothergill, Secretary.*

August 18. 1830. — **Prizes were awarded as under:** —

Plants. Stove or Green-house: 1. *C*áctus speciòsa, John Entwisle, Esq.; 2. Kalosánthes coccínea, and 3. Erythrìna *C*rísta-gálli, Mr. Joseph Sleath; 4. Calceolària rugòsa, Mr. James Cheetham; 5. Phœnócoma prolífera, Mr. Jos. Tate; 6. Hedýchium coronàrium, and 7. *C*rìnum americànum, John Entwisle, Esq. — Hardy: 1. *E*rica stricta, Mr. J. Ecroyd; 2. *C*ístus ladaníferus, Mr. J. Whitworth; 3. Potentílla floribúnda, 4. Menzièsia *p*olifòlia, Mr. J. Ecroyd; 5. *C*ýtisus capitàtus, Mr. R. Scholfield. Herbaceous: 1. Campánula pyramidàlis álba; 2. Chelòne digitàlis, Mr. James Hoyle; 3. Seedling *D*elphínium, Mr. James Cheetham; 4. *G*èum coccíneum, Mr. R. Robertson; 5. *Œ*nothèra serótina. Mr. J. Ecroyd; 6. *Gentiàna asclepiàdea*, Mr. George Haworth; 7. *Phlóx* élegans, Mr. J. Tate; 8. *L*ílium chalcedónicum, Mr. J. Cheetham. — Pelargoniums. Grown in the Green-house: 1. Victory, John Entwisle, Esq.; 2. Tricolor, Mr. J. Tate; 3 Lancashire Lad, John Entwisle, Esq.; 4. Hùmei, Mr. J. Tate. Grown without a Green-house: 1. Macránthon. 2. 3. Victory, and 4. Spectábile, Mr. H. Midgley; 5. Prince Leopold, Mr. R. Crossley. — Annuals or Biennials: 1. Coreópsis tinctòria, Mr. E. Brumfitt; 2. Clárk*ia* pulchélla, and 3. *M*álope trífida, Mr. J. Ecroyd; 4. Calceolària pinnàta, and 5. *I*bèris umbellàta, Mr. R. Robertson.

Flowers. Carnations: Paul Pry (Silver Cup, given by John Wakefield, Esq.; premier), Miss Jane Clough. Potter's Champion (Subscription), Mr. John Whitworth. Scarlet Bizarres: 1. Perfection, Miss Jane Clough; 2. Rising Sun, Mr. John Whitworth; 3. Duke of Richmond, Mr. Nathan Kershaw; 4. Seedling, Mr. Joseph Tate; 5. Mrs. Knyvett, Mr. John Morton; 6. Seedling, George Priestley, Esq.; 7. Fletcher's Lord Nelson, Mr. Alexander Fothergill; 8. Foxhunter, Mr. C. Lee. Pink Bizarres: 1. Rainbow, J. M. Taylor, Esq.; 2. King Alfred, Mr. C. Lee; 3. Paul Pry, George Priestley, Esq.; 4. Seedling, Mr. E. Hilton; 5. Duke of Kent, Mr. C. Lee; 6. Bang Europe, 7. Summit of Perfection, and 8. Seedling, Mr. James Walmsley. Purple Flakes: 1. Major Cartwright, Mr. Thomas Smith; 2. Princess Charlotte, and 3. Seedling, George Priestley, Esq.; 4. Henry Hunt, Mr. John Scholes; 5. Colonel, Mr. John Morton; 6. John Wright, George Priestley, Esq.; 7. Bates's Wellington, Mr. Thomas Smith; 8. Commander, Mr. John

Etches. Scarlet Flakes: 1. Belmont, Mr. John Etches; 2. Madame Mara, Mr. C. Lee; 3. Champion, E. Ball, Esq.; 4. York Superior, Geo. Priestley, Esq.; 5. Duke of Rutland, Mr. J. Whitworth; 6. Seedling, Mr. J. Walmsley; 7. unknown, and 8. Seedling, G. Priestley, Esq. Rose Flakes: 1. Duchess of Devonshire, Mr. John Taylor; 2. Sir George Crewe, Mr. John Wild; 3. Queen Adelaide, Mr. James Walmsley; 4. Lady Hood, Mr. John Dalton; 5. Miss Sitwell, Mr. John Whitworth; 6. Eliza, Mr. John Ingle; 7. Smiling Beauty, Mr. John Lucas; 8. Ruler, Mr. C. Lee.—Picotees. Red-striped: 1. Will Stukeley, Mr. A. Fothergill; 2. Jubilee, E. Ball, Esq.; 3. Incomparable, Mr. J. Whitworth; 4. Seedling, Mr. Thomas Travis; 5. Chilwell Beauty, Mr. J. Whitworth. Purple-striped: 1. Albion, Mr. T. Travis; 2. Lord Nelson, Mr. J. Whitworth; 3. Royal Purple, Mr. H. Thomas; 4. Mary Anne, Mr. C. Lee; 5. Lancashire Hero, Mr. H. Thomas. Red-feathered: 1. Lady Nelson, Mr. John Wild; 2. Star, and 3. Ringleader, Mr. T. Travis; 4. Firebrand, and 5. Comet, Mr. H. Thomas. Purple Feathered: 1. Cleopatra, Mr. T. Smith; 2. Miss Emma, Mr. C. Lee; 3. Miss Willoughby, Mr. John Whitworth; 4. Duchess of Rutland, Mr. J. Etches; 5. Duke of Wellington, Mr. C. Lee.—Georginas. Double: 1. Exímium, Mr. John Jones; 2. Purpùreum spléndens, John Entwisle, Esq.; 3. unknown, 4. Triumphant, and 5. Scarlet Turban, Mr. J. Tate. Single: 1. Seedling, Mr. J. Ashworth; 2. Prince William, Mr. J. Scholes; 3. Yellow, Mr. J. Jones; 4. and 5. Seedling, Mr. J. Ashworth.

Fruit. **Grapes: 1. Hamburgh, Mr. J. Ashworth; 2. Tokay, John Entwisle, Esq.**

Culinary Vegetables. **Peas: 1. Green Marrows, Mr. R. Robertson; 2. Woodward's new Dwarf, Mr. J. Haworth.**

A premier prize of two sovereigns, given by John Entwisle, Esq., was awarded to Mr. Samuel Wild, for the best plate of Gooseberries, twenty in number, eighteen ounces. — *John Ecroyd. Rochdale, 3d month* 12. 1831.

April 27. 1831.—Prizes were awarded as under : —

Plants. Stove or Green-house: 1. Ixòra coccínea, John Entwisle, Esq.; 2. Cáctus speciòsa, and 3. Azàlea índica var. álba, Mr. R. Craig; 4. E'pacris pulchélla, Mr. William Lodge; 5. Erythrìna Crista gálli, J. Entwisle, Esq.; 8. Helichrỳsum sesamöides, 7. Melaleùca lanceolàta, George Priestley, Esq.; 8. *Petùnia* nyctaginiflòra, Clement Royds, Esq.—Herbaceous: 1. Tríllium grandiflòrum, Mr. H. Midgley; 2. Tríllium eréctum var., J. Whitworth; 3. Anemòne thalictröides var. plèno, J. Ecroyd; 4. Primula cortusöides, Mr. Joseph Clegg; 5. Lithospérmum dàùricum, J. Ecroyd; 6. Ramónda pyrenàica, George Priestley, Esq.; 7. Uvulària grandiflòra, Mr. H. Midgley; 8. Lithospérmum pulchéllum, Mr. J. Ecroyd.—Hardy Shrubs; 1. Andrómeda rígida, Mr. Robert Robertson; 2. Andrómeda polifòlia, Mr. J. Ecroyd; 3. Menzièsia cærùlea, Mr. Robert Scholfield; 4. Andrómeda calyculàta, Mr. Robert Robertson.

Flowers. Auriculas: Premier Prize, Booth's Freedom, Mr. John Etches. Green-edged: 1. Freedom, Mr. Thomas Clegg; 2. Colonel Taylor, Mr. H. Midgley; 3. Highland Laddie, Mr. James Cheetham; 4. Ruler, Mr. H. Midgley; 5. Tar, Mr. John Etches; 6. Nelson, Mr. John Taylor; 7. Do Little, Mr. H. Midgley; 8. Governor, Mr. H. Thomas. Grey-edged: 1. Ringleader, Mr. J. Etches; 2. Newton Hero, and 3. Privateer, Mr. John Taylor; 4. Waterloo, Mr. C. Lee; 5. Revenge, Mr. John Taylor; 6. Shepherdess, Mr. E. Hilton; 7. Ploughboy, William Turner, Esq.; 8. Complete, Mr. James Mellor. White-edged: 1. Venus, Mr. J. Taylor; 2. Delight, Mr. H. Midgley; 3. Incomparable, Mr. J. Taylor; 4. Regulator, Mr. J. Cheetham; 5. Favourite, Mr. James Mellor; 6. Regular, Mr. J. Etches; 7. Glory, Mr. C. Lee; 8. Chancellor, Mr. J. Cheetham. Selfs: 1. True Blue, Mr. J. Cheetham; 2. Metropolitan, Mr. J. Taylor; 3. Lord Lee, Mr. J. Etches; 4. Flora's Flag, Mr. C. Lee; 5. Seedling, Mr. T. Clegg; 6. Ned Lud, Mr. J. Tweedale; 7. Lord Primate, and 8. Othello, Mr. J. Etches.—Polyanthus: 1. Alexander, Mr. C. Lee; 2. Bang Europe, and 3. Princess Royal, Mr. J. Cheetham; 4. Invincible, Mr. H. Thomas; 5. Cox's Regent, and 6. George the Fourth, Mr. J. Cheetham; 7. Emperor, Mr. J. Taylor; 8. Yorkshire Regent, Mr. C. Lee. Alpines: 1. King, and 2. Mr. A. Fothergill; 3. Mary Anne, Mr. William Lodge; 4. Moses, Mr. J. Ecroyd; 5. Seedling, Mr. William Lodge. Largest Bunches of best Pips: Green-edged, Booth's Freedom, Mr. Thomas Clegg; Grey-edged, Ringleader, Mr. C. Lee; White-edged, Venus, Mr. John Taylor; Self, Metropolitan, Mr. Thomas Clegg; Alpine, Favourite, Edward Ball, Esq.; Polyanthus, Alexander, Mr. James Cheetham.— Hyacinths. Double: 2. Don Gratuit, Mr. J. Ecroyd. — Pelargoniums: 1. Victory, and 2. Hùmei, John Entwisle, Esq.; 3. Tricolor, Mr. R. Craig. — Hardy Bulbous-rooted Flowers: 1. Narcissus bícolor, Mr. James Tate; 2. Narcissus moschàtus, George Priestley, Esq.; 3. Narcíssus odòrus, Edward Ball, Esq.; 4. Fritillària melèagris álba, Mr. H. Midgley; 5. Fritillària latifòlia, Mr. James Tate.

Culinary Vegetables. Cucumbers: 3. Prize-fighter, Mr. R. Craig.

Extra-Prizes. Erìca élegans, George Priestley, Esq. Ròsa odoratíssima, Clement Royds, Esq. E'pacris grandiflòra, John Entwisle, Esq. *Ornithógalum* flavíssimum, Prímula sinénsis, Corræ̀a speciòsa, Mr. James Tate.

May 25. **Prizes were awarded as under : —**

Plants. Stove or Green-house: 1. Cáctus speciosíssima, J. Entwisle, Esq.; 2. Borònia serrulàta, Mr. J. Ashworth; 3. Chorizèma, and 4. Erythrìna Crísta gálli, J. Entwisle, Esq.; 5. *Petùnia* nyctaginiflòra, C. Royds, Esq.; 6. Hæmánthus multiflòrus, J. Entwisle, Esq.; 7. Calceolària rugòsa, Rev. W. R. Hay. — Pelargoniums. Grown in a Green-house: 1. Victory, 2. Hùmei, 3. Spectábile maculàtum, J. Entwisle, Esq.; 4. Lord Combermere, J. Starkie, Esq. Grown without a Green-house: 2. Incomparable, Mr. J. S. Lancashire; 3. Davey*ánum*, Mr. R. Crossley; 4. Latilobum, Mr. H. Midgley. — Herbaceous: 1. Anemòne narcissiflòra, Mr. H. Midgley; 2. Lupìnus polyphýllus, Mr. J. Standring; 3. Saponària ocymöides, Mr. W. Lodge; 4. Prímula nívea, Mr. H. Midgley; 5. Lìnum flàvum, Mr. J. Ecroyd; 6. Dodecàtheon Meádia var. álba, Mr. H. Midgley; 7. Phlóx divaricàta, Mr. R. Robertson; 8. Saxífraga granulàta, Mr. A. Fothergill. — Hardy: 1. Dáphne Cneòrum, Mr. J. Howard; 2. Cýtisus purpùrea, Mr. R. Robertson; 3. Cotoneáster microphýlla, Mr. J. Ecroyd; 4. Lèdum buxifòlium, C. Royds, Esq.; 5. Spiræ̀a bélla, Mr. R. Scholfield; 6. Lèdum latifòlium, Mr. R. Robertson; 7. Spártium multiflòrum, J. Starkie, Esq.; 8. Erìca mediterrànea, Mr. J. Ecroyd.

Flowers. Tulips (Premier): Baguet, Mr. John Taylor. Feathered Bizarre: 1. Goud Beurs, Mr. M. Greenlees; 2. Trafalgar, W. Turner, Esq.; 3. Leopoldina, Mr. J. Sleath; 4. Duc de Savoie, Mr. J. Stewart; 5. Surpasse-Catafalque, W. Turner, Esq.; 6. La Cantique, Mr. H. Thomas; 7. Black Prince, Mr. W. Crompton; 8. Count, W. Turner, Esq. Flamed Bizarre: 1. Roi des Bizarres, Mr. H. Thomas; 2. La Cantique, Mr. J. Stewart; 3. Turner's Bizarres, Mr. W. Crompton; 4. Lustre de Beauté, Mr. J. Ashworth; 5. Black Prince Mr. J. Ecroyd; 6. Phœnix, and 7. Beauté Frappante, Mr. M. Greenlees; 8. Farrand's Liberty, W. Turner, Esq. Feathered Byblœmen: 1. Baguet, Mr. J. Etches; 2. Bienfait, W. Turner, Esq.; 4. Washington, Mr. J. Stewart; 5. Cato, Mr. H. Thomas; 6. Maitre par-tout, Mr. J. Etches; 7. Laura

Mr. W. Crompton; 8. Captain Flash, Mr. T. Smith. Flamed Bybloemen: 1. Waller's Violet, Mr. W. Crompton; 2. Grand Duchess of Tuscany, Mr. J. Ecroyd; 3. Monsieur Pitt, and 4. Vulcan, W. Turner, Esq.; 5. Reine des Fleurs, Mr. J. Stewart; 6. Princess Charlotte, Mr. H. Thomas; 7. Gadsby's Magnificent, Mr. M. Greenlees; 8. Maître par-tout, Mr. W. Crompton. Feathered Rose or Cherry: 1. Comte de Vergennes, Mr. J. Whitworth; 2. Do Little, Mr. J. Ecroyd; 3. Duc de Bronte, Mr. W. Crompton; 4. Walworth, W. Turner, Esq.; 5. Beaurepere, Mr. J. Ecroyd; 6. Heroine, Mr. J. Whitworth; 7. Nestor, Mr. H. Thomas; 8. Hero of the Nile, Mr. J. Tweedale. Flamed Rose or Cherry: 1. Unique, W. Turner, Esq.; 2. Vesta, Mr. W. Crompton; 3. Triomphe Royal, Mr. J. Morton; 4. Feu de grand Valeur, Mr. W. Crompton; 5. Rose Monte, Mr. J. Whitworth; 6. Do Little, Mr. M. Greenlees; 7. Lord Hill, and 8. Roi des Cerises, Mr. J. Stewart Selfs: 1. Mine d'Or, W. Turner, Esq.; 3. White Flag, Mr. M. Greenlees. Breeders: 1. Lady Crew, Mr. M. Greenlees; 2. Baguet, Mr. J. Stewart; 4. Glaphyra, Mr. J. Taylor.

Culinary Vegetables. Cucumbers: 4. Longford, Mr. R. Craig. — Potatoes: 1. Unwin's Kidney, and 2. Golden Dwarf, Mr. R. Craig; 3. Unwin's Kidney, Mr. J. S. Lancashire.

Extra-Prizes. *E*rìca odoràta, and *E*rìca propéndens, Mr. J. Ashworth. — *Alex. Fothergill, Secretary.*

NORFOLK.

Lynn Horticultural Society. — *June* 30. The articles exhibited were very numerous, and augur well for the future prospects of the Society. We cannot too much praise the friends of this infant institution for their liberality in sending various articles which were not named in the list for prizes. We think it right to say that this kindness was duly noticed by the award of several extra-prizes for such productions; and the Committee intend to act in like manner in future. The exhibition was far better than could have been expected from either the short notice or the state of the weather; and the company was numerous and highly respectable. A prize was awarded for cucumbers grown in a frame with paper lights, and no bottom heat, to the Rev. F. Browning. [Prizes were given to numerous others, but, as the names of the particular sorts are not given, we forbear enumerating them.] (*Bury and Norwich Post*, July 6.)

Norfolk and Norwich Horticultural Society. — *May* 25. We must refer our readers to the list of prizes for an elucidation of those plants which were considered most deserving of notice; but we trust we shall not be considered invidious in pointing out some few of those that particularly attracted attention. The Aquilègia glandulòsa is a most valuable addition to our herbaceous plants, and eminently deserving a place in the flower borders in every garden. Lechenaúlt*ia* formòsa is a most desirable green-house plant, continuing many months in bloom. The Erythrìna *C*rista gálli was a splendid specimen, but rather bruised in being brought from a distance. The genera Metrosidèros, Boròn*ia*, Sprengèl*ia*, *P*olýgala, E'pacris, *N*èrium, *E*rìca Lasiopétalum, each produced some magnificent specimens. The gems of the exhibition were, twenty-two splendid pelargoniums, from Mrs. Burroughes, of Hoveton, among which the megalánthon, flàgrans, megalostíctum, Hill*iànum*, and nùtans were particularly striking. From Mrs. Ives of Catton, some splendid green-house and stove plants, among which the *C*áctus, Ixòr*a* coccínea, and *N*èrium spléndens, attracted universal admiration. From Mrs. Mackie, a splendid collection of fifty-six choice tulips, among which, the Glòria albòrum, Glory of Norwich, Rose Mont de Crète, Trafalgar, Rose Parfaite, Charbonnier, and Lord Exmouth were much admired; and a collection of seventy-six pelargoniums, Calceolària lanceolàta [angustifòlia], E'pacris grandiflòra, Pimelèa *r*òsea, &c. &c. From Mr. Middleton, some fine specimens of pelargoniums and other green-house plants, among which we particularly noticed fine-grown plants of *P*olýgala cordàta and Metrosidèros floribúndus. From the Rev. G. R. Leathes, some choice plants, among which the Erythrìna *C*rísta gálli and Lechenaúlt*ia* formòsa were deservedly much admired. From the Rev. R. H. Cooper, a fine collection of well-grown pelargoniums, &c. From Mr. John Smith, a large collection of pelargoniums and other green-house plants. From Mr. Noverre, a collection of green-house plants, &c. From William Robinson, Esq., some well-grown specimens of pelargoniums, &c. From Charles Thompson, Esq., a fine lemon tree, in full fruit, raised from a cutting by Mr. Jesse Youngman, Mr. Thompson's gardener, about fourteen years since. From Mrs. Dashwood, some beautiful ranunculuses in pots, a choice fern, &c. &c. From Mrs. Martineau, a splendid Calceolària integrifòlia and other showy green-house plants. From William Foster, Esq., a magnificent pelargonium. There was one pine, which was sent by Lord Stafford, not for a prize, but returnable; His Lordship also sent a smooth melon. Colonel Lucas, J. Penrice, Esq., and the Rev. T. C. Blofeld sent some fine bunches of Black Prince and Hamburgh grapes. Amongst the dessert apples were some Chester golden pippins, grown in the garden of Mr. R. Bradfield, of Heacham (a non-subscriber). There were a few plates of strawberries, and a dish of blanche mange made from a sea-weed. Mr. Lindley exhibited a root of the scarlet runner kidneybean. [This we have previously noticed, p. 485.] Prizes were awarded as under: —

Plants and Flowers. Tulips: Glory of Norwich, Mrs. Mackie. — Ixòr*a* coccínea, Mrs. Ives. *C*áctus speciosíssima, Mrs. Ives. *C*áctus hybrid, Mr. Middleton. *C*áctus (unnamed, from seed brought from Mexico by Mr. Bullock), Mr. Hitchen. Twelve pots of *C*áctus speciòsa, Mrs. Mackie. — Yellow China Rose, Mrs. R. J. Turner. — Giant Stock, Mr. J. Seppings.

Culinary Vegetables. Giant Rhubarb, Mr. J. Lascar, gardener to T. Cobbold, Esq. — Perennial Kidneybean, Mr. Lindley. (*Norfolk Chronicle*, May 28.)

NORTHUMBERLAND.

Durham Botanical and Horticultural Society. — The prizes were awarded as follows: —

Gold medals to Mr. Scott, gardener to Edward Charlton, Esq. Sandoe, for the best melon, and the best dish of grapes; and to Mr. Harrop, Sunderland, for the best tulip (Rose Triomphe Royal). Silver medals to Mr. Clarke, gardener to Mrs. Bewicke, of Close House, for the best half-peck of potatoes; to Mr. Watson, gardener to James Kirsopp, Esq., for the best half-peck of peas; to Mr. Harrop, Sunderland, for the second tulip (Violet Blondeau), and for the best bouquet of Brompton stocks; to Mr. Avery, gardener to W. T. Salvin, Esq., Croxdale, for the best exotic plant in flower (*C*áctus speciosíssima); to G. H. Wilkinson, Esq., Harperley Park, for the best bouquet of flowers; and to Mr. Avery, gardener at Croxdale, for the best six lettuces. Bronze medal to Mr. Herbert, gardener, Durham, for the third tulip (Incomparable Primus). A very large and fine Hydrángea, from the garden of B. J. Salvin, Esq. of Burn Hall; and a beautiful Calceolària integrifòlia, from that of Mr. J. Herbert, gardener, Durham, were in the room, and both were greatly admired.

Hexham Botanical and Horticultural Society. — *April* 30. Prizes were awarded to the following competitors: —

To Mr. Robert Grey, gardener, Humshaugh, for the first Auricula, Metcalfe's Lancashire Hero. To Mr. James Scott, gardener to Edward Charlton, Esq., Sandoe, for the second and third Auriculas, Pendleton's Violet and Parkinson's Sir Solomon; and the second Hyacinth, Lord Wellington. To Mr. Robert Charlton, gardener, Wall, for the fourth and fifth Auriculas, Gorton's Champion of England and Grimes's Privateer; and the first Hyacinth, Groot Vorst. (*Newcastle Courant*, May 14.)

July 2. Prizes were awarded as under: —

To Mr. Robert Grey, gardener, Humshaugh, for the first, third, fourth, and fifth Pinks, Brookes's Eclipse, Sawer's Archduke Charles, Barnard's Bexley Hero, and Lucker's Defiance. To Mr. James Scott, gardener to Edward Charlton, Esq., Sandhoe, for the second Pink, Barrett's Conqueror. (*Newcastle Courant*, July 23.)

Morpeth Florists' Society. — *May* 30. Prizes were awarded as under: —

Tulips. Rose-coloured: To Mr. M'Lellan, for the first, second, and fourth, Triomphe Royal, Cerise Triomphante, and Rose Cerise. To Mr. Noble, for the third and fifth, Rose Sans Egal, and Count Vergennes. — Bybloemens: To Mr. M'Lellan, for the first, second, fourth, and fifth, Comtesse de Provence, Triomphe de Lisle, Reine des Tulipes, and Gloria Mundi; to Mr. Noble, for the third, Bienfait. Bizarres: To Mr. M'Lellan, for the first, second, third, fourth, and fifth, Grandeur du Monde, Goude beurs, Demetrius, Leopoldina, and Bell's King. (*Newcastle Courant*, June 18.)

The Friendly Florists of Sunderland and its vicinity held their Annual Show of Tulips, on June 8., when the prizes were adjudged as follows: —

To Mr. Thomas Davison, for the first and second, Belle Actrice, and Ursinon[?] Minor. To Mr. John Harrop, for the third, Violet Blondeau. To Mr. Thomas Moody, for the fourth, General Loftus. To Mr. William Hind, for the fifth, La Cantique. Mr. Ward exhibited a new kind of Rhubarb, raised from seed by Mr. Robert Holmes, which was excellent.

The Florists of Whitehill Point and its vicinity held their Annual Show of Pinks on the 9th of July, when the prizes were adjudged as follows: —

To Mr. Moses Dormand, for the first, Dormand's Supreme. To Mr. Peter Gray, for the second and fourth, Bexley's Beauty, and Stephen's Waterloo. To Mr. William Busby, for the third, Windsor's Confident. To Mr. Thomas Johnson, for the fifth, Handy's Miss Goss.

The Botanical and Horticultural Society of Newcastle. — *April* 8. Prizes were awarded as under: —

Silver Medal: For the best Exotic Plant in Flower (Camél*lia* japónica *Sansánqua* ròsea), to Mr. James Fenwick, gardener to Matt. Anderson, Esq., Jesmond. There was a very beautiful show of exotics, among which were particularly noticed the following, in very fine condition, viz.: *C*áctus *p*hyllanthöìdes, from Mr. J. Trotter, at D. Cram's, Esq.; and from Mr. A. Sampson, at William Losh's, Esq., Benton; Mùs*a* coccínea, Agapánthus umbellàtus, and *P*lumbàgo *r*ósea, from the garden of J. G. Clarke, Esq., Fenham; *E*rìca Bonpland*iàna*, Amarýllis Johnsòn*i*, Corræ'*a* speciòsa, and *A*càcia armàta, from Mr. Falla's, Gateshead. (*Newcastle Courant*, April 23.)

May 6. The following prizes were awarded: —

For the best variegated Auricula, Metcalf's Lancashire Hero, the silver medal to Mr. Robert Charlton, gardener, Wall. For the best Double Hyacinth, Groot Vorst, for the best Single Hyacinth, Lord Nelson, silver medals; and for the best Polyanthus, Pearson's Alexander, the bronze medal to Mr. Adam Hogg, at Messrs. Falla and Co.'s, Gateshead. For the best Pelargonium in flower, règium, or George the Fourth; and for the best Exotic Plant in flower, Brugmán*sia* suavèolens, silver medals to Mr. Moderill, gardener to J. C. Anderson, Esq., Point Pleasant. The following exotics were exhibited: Agapánthus umbellàtus, Erythrìna *C*rísta gálli, and *C*áctus *p*hyllanthöìdes.

June 3. Prizes were adjudged as under: —

Gold Medal. To Mr. Matt. Bates, Kenton, for the best Tulip (Perle blanche).—Silver Medals. To Mr. George Stevenson, Carr's Hill, for the second best Tulip (Rose Triomphe Royal). To Mr. James Scott, gardener to Edward Charlton, Esq., Sandhoe, for the best Bouquet of Double Brompton Stocks. To Mr. Archibald Simpson, gardener to William Losh, Esq., Little Benton, for the best Exotic Plant in flower (Brugmán*sia* suavèolens). A Bronze Medal to Mr. Cook, Bywell Hall, for the third best Tulip (Rose Hebe).—The show of tulips was most brilliant; and, in proof of the emulation excited by this Society, there were no less than seventeen competitors for the medals granted for that beautiful flower, the two first prizes for which were awarded to men in very humble situations of life, beating all the flowers exhibited by the best gardeners and florists in the country. The Brugmán*sia* suavèolens, from Mr. Losh's garden, was above 7 ft. high, and entirely covered with flowers.

July 8. The following prize medals were awarded: —

One gold and two silver medals to Mr. Archibald Simpson, gardener to William Losh, Esq., Little Benton, for fruit [sorts not mentioned], and the best Exotic Plant in flower (*N*èrium spléndens). The silver medal to Mr. Joseph Clarke, gardener to Mrs. Bewicke, Close House, for the best dish of Grapes; and the sum of three guineas to the gardener who could produce the best testimonials of his abilities, and of the greatest length of servitude in one family, has been this year awarded to Mr. Clarke, he having lived as gardener to Mrs. Bewicke for fourteen years. There were two Bouquets of beautiful Georginas from the gardens of Mr. Newton, fruiterer, Newcastle, and Armorer Donkin, Esq., in full blow at this early season; and a fine plant (Erythrìna *C*rísta gálli), and some most elegant water lilies (*N*ymphæ'a álba), from J. C. Anderson, Esq., of Point Pleasant. Seven Jack Apples were sent by J. L. Ridley, Esq., of Arbour House, which were gathered in that garden (lately occupied by George Donald, Esq.) in the autumn of 1828, in the most perfect state of preservation. They were stated to have been kept in sand.

July 12. The Judges awarded the prizes; but, as the names of the sorts are not given (except the *N*èrium spléndens, for which a silver medal was awarded to Mr. J. Charlton, gardener to S. Brooks, Esq., Hermitage), they are not here enumerated.

An extremely fine Seedling Strawberry, and a great bearer, named the Whitfield Seedling, from the garden of William Orde, Esq., M.P., Whitfield, was exhibited by Mr. Grey, and from the fine quality, together with the great quantity of fruit it bears, appears likely to be a valuable addition to the sorts already cultivated in this county.

SOMERSETSHIRE.

Bristol Botanical and Horticultural Society. — *April* 19. Prizes were awarded as follows: —

Plants. 1. Alpínia nùtans, Miss Bright; 2. Coffēa arábica, John Hurle, Esq.; 3. Xylophýlla latifòlia, O. Fedden, Esq. — Green-house: 1. Sálvia spléndens, Mrs. H. Vaughan; 2. Fúchsia microphýlla, Miss Bright; 3. Amarýllis Johnsòni, W. S. Jacques, Esq. — Pelargoniums. Light: 1. Macránthon, Mrs. H. Vaughan; 2. Formòsum, D. Stanton, Esq. Red: 1. De Vere, 2. Naírnii, and 3. Moreànum, Mrs. H. Vaughan. — Ericæ: 1. Báccans, and 2. Læ`vis, C. Harford, Esq. — Hardy, Forced: 1. Pæònia Moútan, O. Fedden, Esq.; 2. Cabbage Rose, Mrs. H. Vaughan. — Hardy: 1. Onósma taúrica, C. George, Esq.; 2. Viola grandiflòra, Mr. Elbury.

Flowers. Auriculas. Green-edged: 1. Waterloo, Mr. Chambers; 2. Warris's Blucher, O. Fedden, Esq.; 3. Cockup's Eclipse, Mr. Chambers. White-edged: 1. Page's Lord Hill, Mr. Chambers; 2. Taylor's Incomparable, O. Fedden, Esq.; 3. Grimes's Privateer, Mr. Maynard. Grey-edged: 1. Privateer, Mr. Chambers; 2. Privateer, and 3. Wood's Lord Lascelles, O. Fedden, Esq. — Alpines: 1. Conspícua, and 2. Sparkler, Mr. Pillard. Seedling, Mr. Chambers. — Polyanthuses. Dark: Pearson's Alexander, Mr. Pym. Seedling, Mr. Taylor.

Fruit. Pine-apples: 1. 2. and 3. Queen, John New, jun. Esq. — Grapes: 1. Sweetwater, and 2. Black Cluster, R. Oakley, Esq. — Apples. Dessert: 1. Kentish Pippin, Mr. Beard; 2. Deux ans, Rev. Mr. Richards.

Culinary Vegetables. Broccoli. White: 1. Mr. Gerrish; 2. Mr. Maynard, jun. Purple, Mr. Sealey. — Cabbage: Pilling's Early, Mr. Plumley. — Asparagus. Green, Mr. Maynard. Red, Mr. Gerrish. — Rhubarb: 1. Myatt's New, Mr. Pillans; 3. Hýbridum longipetiolàtum, W. P. Taunton, Esq.

Extra-Prizes. Keen's Seedling Strawberries, R. Strachey, Esq. Spring Spinage, Captain Mitchell. Amarýllis psittacìna Johnsòni, W. O. Bigg, Esq.

Censors. Mr. Franklyn, Mr. Jacques, Mr. Lucas, and Mr. Lee.

Nurserymen's Prizes. Acàcia verticillàta, Mr. Allen; Rhododéndron pónticum, Mr. Allen; Prímula cortusöìdes, Mr. Maule.

Censors. Dr. Dyer, Mr. Young, and Mr. Fedden.

Mr. Miller excited much interest by announcing his intention of establishing, at his premises on the Down, an experimental botanical garden, on the systems of Linnæus and Jussieu, with an arboretum attached, and a large reading-room, to be supplied with various publications upon horticultural, botanical, and agricultural subjects. The peculiar advantages which Mr. Miller's premises possess for this undertaking, together with his well-known liberality, lead to the most confident anticipations of its success; in which case the naturalist, the man of science, and the artist will be provided with the most desirable assistance in the pursuit of their favourite studies, whilst every annual subscriber will have the privilege of visiting, at all times, a garden laid out in the best taste, and in the most correct style. (*Bristol Mirror*, April 23.)

May 17. Amongst the plants we noticed some very fine specimens of Amarýllis and Cáctus, from Christopher George, Esq.; Oranges, from Captain Withering and John Prideaux, Esq.; Hóya carnòsa, Agapánthus umbellàtus, Clerodéndron fràgrans, and Fúchsia grácilis, from Mrs. William Fripp; Mímulus glutinòsus, from W. S. Jacques, Esq.; Sálvia spléndens, from Thomas Daniel, Esq.; Pelargoniums from Captain Langton, Mrs. Hugh Vaughan, and John Hurle, Esq. Prizes were awarded as under: —

Plants. Stove: 1. Mùsa coccínea, Mrs. W. Fripp; 2. Amarýllis Johnsòni angustifòlia, R. Osborne, Esq.; 3. Isméne calathìnum, H. Nugent, Esq. — Green-house: 1. Gladìolus blándus hýbridus, H. Nugent, Esq.; 2. Cèreus flagellifórmis, C. George, Esq.; 3. Melaleùca fúlgens, Mrs. J. W. Hall. — Cape Ericæ: 1. Múndula, and 2. Odoràta, H. Nugent, Esq. — Pelargoniums. Light: 1. Macránthon, Mrs. H. Vaughan; and 3. Hilliànum, Mr. Elbury. Dark: 1. Malachræfòlium, Mr. Elbury; 2. Lord Combermere, Thomas Daniel, Esq.; 3. Daveyànum, Mrs. H. Vaughan. Red: 1. De Vere, Mr. Verney; 2. Naírnii, John Hurle, Esq.; 3. George the Fourth, Mrs. H. Vaughan. — Hardy: 1. Lonicèra Xylósteum, and 2. Lèdum latifòlium, G. Sawyer, Esq. — Hardy Perennials: 1. Phlóx divaricàta, Miss Swete; 2. Viola George the Fourth, Captain Mitchell.

Flowers. Tulips. Seedling: 1. W. S. Jacques, Esq.; 2. and 3. Mr. Chambers.

Fruit. Grapes. Black: 1. St. Peter's, P. J. Miles, Esq.; 2. Black Tripoli, R. Oakley, Esq. White: White Frontignac, P. J. Miles, Esq. — Pines: 1. Queen, Mr. Mackay; 2. Queen, Mr. Helps; 3. Queen, John New, jun. Esq.

Culinary Vegetables. Asparagus. Green, Mr. Maynard; Red, Mr. Sealey. — Lettuces: 1. White Cos, and 2. Brown Cos, Mr. Sealey. — Potatoes: 1. Ash-leaved Kidney, Mrs. H. Vaughan; 2. Shaw's Early, G. W. Hall, Esq.

Extra-Prizes. Black Hamburgh Vine, in pots, with Grapes, Mrs. H. Vaughan. Dwarf Orange, Captain Withering. Sulphur Broccoli, Mr. Maynard. Sálvia spléndens, Thomas Daniel, Esq.

Censors. Rev. W. Gray, Dr. Dyer, Mr. Lee, Mr. Lucas, Mr. Saunders, Mr. Franklyn, and Mr. Maule.

Nurserymen's Prizes. Stove Plant: Strelítzia regìnæ, Mr. Allen. Green-house Plant: Melaleùca fúlgens, Mr. Maule. Pelargoniums, Hilliànum, Mr. Young. Hardy Perennials: Anthýllis [itálica], Mr. Allen; Andrómeda buxifòlia, Mr. Maule.

Censors. Mr. W. S. Jacques, Mr. G. H. Hall, and Mr. Rootsey. (*Bristol Mirror*, May 21.)

June 21. The following were worthy of notice: — Salpiglóssis stramínea, Erythrìna laurifòlia, Alstrœmèria Símsii, Pelargònium succuléntum, Pelargònium Naírnii, Fúchsia grácilis, Cáctus speciosíssima, Pimelèa decussàta, pinks, and roses, from Mr. Miller; a fine show of heaths and pelargoniums, belonging to Mr. Lee; Hydrángea and pelargoniums, from Mr. Verney; and a lemon tree, from Mr. Langworthy, Bath. Prizes were awarded as under: —

Plants. Stove: 1. *C*áctus speciosíssima, R. Bright, Esq.; 2. Gloxín*ia* speciòsa, C. Harford, Esq.; 3. *C*áctus *O*púntia, J. Acraman, Esq. — Green-house: 2. *C*onvólvulus *C*neòrum, Miss Bayly; 3. Lophospérmum erubéscens, Mr. James Mackay. — Pelargoniums. Seedling, Mr. James Elbury.—Ericas: 1. Depréssa, and 2. Præ'gnans var. coccínea, H. Nugent, Esq. — Herbaceous: 1. Saponària *o*cymöìdes, H. Myers, Esq.; 2. Eùcomis punctàta, Mr. R. Nott; 3. Campánula latifòlia, Miss Swete. — Hardy Annuals, Clárk*ia* pulchélla, George Sawyer, Esq.

Flowers. Seedling Ranunculus, Mr. Maynard.

Fruit. Pine-apples: 1. and 2. Black Antigua, W. P. Jillard, Esq.—Grapes. Black: 1. St. Peter, Mrs. Cartwright; 2. Tripoli, R. Oakley, Esq. White: 1. Muscat of Alexandria, Mrs. John Cave; 2. Sweetwater, C. Harford, Esq. — Strawberries: 1. Wilmot's Superb, and 2. Keen's Seedling, George Yeeles, Esq.—Cherries: 1. Bigarreau, Colonel Houlton; 2. May Dukes, Mr. H. Vaughan.

Extra-Prizes. *N*èrium spléndens, John Acraman, Esq. *V*erbèna *Melíndres*, Mr. James Elbury. Hóy*a* carnòsa, John Hurle, Esq Carrots, Altringham, Mr. Maynard.

Censors. J. N. Franklin, Esq., J. L. Knapp, Esq., Dr. Dyer, Mr. Lucas, Mr. Stothard, and Mr. Masey.

Nurserymen's Prizes. Pinks, Seedlings, Mr. Allen. Stove Plants: *C*áctus speciosíssima, and Hóy*a* élegans, Mr. Maule. Green-house Plants: Fúchs*ia* grácilis, Mr. Allen; Elæocárpus cyàneus, Mr. Maule. *E*rìca viridiflòra, Mr. Maule. Hardy Shrubs: *R*hododéndron var. *r*òseum, Mr. Maule. Herbaceous Plants: *O*'robus *l*athyröìdes, Mr. Maule.

Extra-Prizes. Pentstèmon speciòsus, Mr. Maule. Córypha umbraculífera, Mr. Allen.

Censors. Mr. Jessop, Mr. Sanders, and Mr. Rootsey. (*Bristol Mirror*, June 25.)

SUFFOLK.

Bury St. Edmund's Horticultural Society. — *June* 28. Prizes were awarded as follows: —

Strawberries, the smallest number, weighing a pound (29), Mr. Samuel Middleditch. Cherries (Black Eagle), Mr. Barrett, gardener to the Rev. T. G. Cullum. Tender plant (Gloxín*ia* cauléscens), R. Bevan, Esq. Hardy plant (Pentstèmon angustifòlius), Mr. Hodson.

Amongst the flowers worthy of notice were, *E*rìca ventricòsa supérba, and the flowers of several new and beautiful species of Alstrœmèr*ia*, from Mr. Bevan; *D*elphínium sinénse, blue and white *E*rígeron glabéllus, *I*bèris montàna, Pentstèmon pubéscens, striped *N*èrium Oleánder, and three new pelargoniums, from the Botanic Garden; *C*áctus speciosíssima, from T. Clay, Esq., and other showy plants, and a Bouquet of Yellow Roses, from the garden of the Rev. E. W. Mathew, at Pentlow Hall. (*Bury and Norwich Post*, July 6.)

July 26. Amongst the flowers the most curious and beautiful were, the *Calàdium* bícolor, *C*ýclamen *h*ederæfòlium and *J*asmìnum hirsùtum, from Lord Calthorpe's; a Salpiglóssis pícta, and a splendid Coreópsis tinctòria, with nearly three hundred blossoms expanded, shown by Mr. Payne; Martýn*ia* proboscídea, in flower and fruit, and specimens of Calceolària arachnöídea, Pentstèmon pulchéllus, *V*erbèna *c*hamædrifòlia, Eschschóltz*ia* califórnica, Calámpelis scàber, and other choice flowers, from the Botanic Garden; fine georginas, carnations, and anemones, by Mr. Lord, of Northgate Street; an excellent collection of georginas, by Mr. Buchanan; and several good carnations, by Mr. Clarke. The fruits were chiefly confined to gooseberries and currants, some of which were very large and well-flavoured. The Judges were, for flowers, Mr. Armstrong and Mr. Sturley Nunn; for fruits and vegetables, T. Clay, Esq., and Mr. Wright of Ampton. Their award was as follows: —

Melon (Persian), Mr. Hammond, gardener to Sir H. Bunbury.—Cherries (Bigarreau), Mr. Kent, Bury.— Gooseberries, Seedling, Mr. Kent. — Carnations, Seedling, Mr. Musk. Seedling Picotee, Mr. S. Nunn. — Growing Plant (Coreópsis tinctòria), Mr. J. H. Payne. (*Suffolk Chronicle*, August 7. 1831.)

Ipswich Horticultural Society. — *July* 26. Among the fruits and vegetables most deserving notice were, grapes and onions shown by Mr. Burgess, gardener to W. Bateman, Esq.; apricots, by Mr. Cuthill, gardener to the Speaker of the House of Commons; and a cucumber, 27½ in. long, by Mr. Girling. Among the plants were Fúchs*ia* cónica, and *C*ombrètum purpùreum, by Mr. Mills, gardener to W. Rodwell, Esq.; Fúchs*ia* cónica, and *N*èrium odòrum, by Mr. Smith, gardener to D. Alexander, Esq., who also produced a grape vine in a pot, 10 ft. high, containing forty-four buds; the plant appeared to be in a growing state, and was struck from a single spur this season. There were also Fúchs*ia* virgàta, Potentílla Russell*iànum*, Lophospérmum erubéscens, and *G*ladìolus, by Mr. Jeffries, with many more. Prizes were awarded as follows: —

Plants. Stove or Green-house (in bloom, in a pot): 1. *N*èrium odòrum, Mr. Smith. — Hardy (in bloom, in a pot), *V*erbèna *c*hamædrifòlia, Mr. Lovely.

Fruit. Grapes: 1. Black Prince, Mr. Burgess, gardener to W. Bateman, Esq., Bromley Lodge. — Melon: 1. New Scarlet Flesh, Mr. Burgess; 2. Green Flesh, Mr. Lovely. — Apricots: 1. Moorpark, Mr. Cuthill, gardener to the Speaker of the House of Commons. — Cherries, Morello, Mr. Cuthill. —Apples: Table, Striped Juneating, Mr. Burgess; Kitchen, Hawthornden, Mr. Bird. — Gooseberries. Heaviest: Red, Roaring Lion, Mr. Bird; Yellow, Gunner, Mr. Woollard; Green, Angler, Mr. Woollard; White, Eagle, Mr. Hunt. Pound containing fewest, Mr. Hunt. Plate for flavour, Champagne, Mr. Allen, gardener to the Rev. M. Edgar. — Currants. Pound containing fewest bunches: White Dutch, Mr. Woollard; Red Dutch, Mr. Woollard. — Raspberries: 1. Barnet, Mr. Milbourn; 2. Red Antwerp, Mr. Bird.

Culinary Vegetables. Carrots, Altringham, Mr. Bird. Lettuces, Paris Cos, Mr. Milbourn. Turnips, Early Stone, Mr. Milbourn.

Judges. For Fruits, Dr. Beck and Mr. Turner; for Flowers, T. Allen, Esq., and Mr. Hunt; with Mr. Barney as umpire.

An extra-prize was awarded to Mr. Milbourn, for a fine dish of Black Morocco plums. (*Suffolk Chronicle*, July 30.)

Ipswich Flower Show. — *July* 31. 1830. At the Annual Show of Carnations and Picotees, held in this town, the judges appointed were Mr. Shreeve, Mr. Read, and Mr. Patterson, who decided as follows: —

Carnations: 1. Gregory's Alfred, Strong's Victorious, Lee's Rifleman, Fletcher's Duchess of Devonshire, Strong's Esther, and Tomlinson's Duchess of Rutland, Mr. Lee; 2. Taylor's Earl of Denbigh, Pearson's Blucher, Gregory's Alfred, Oddy's Henry Hunt, Fletcher's Duchess, and Ferre's Duke of Bedford, Mr. W. L. Marston; 3. Ives's Prince Leopold, Pyke's Eminent, Wild's Perfection, Costar's Lord Macclesford, H. S. F. Seedling, and Staniforth's Yorkshire Lass, Mr. S.

Baldiston. — Picotees: Hufton's Stukely, and Woollard's Miss Bacon, Mr. Woollard. Seedling Bizarre (afterwards named Woollard's William the Fourth), Mr. Woollard. Seedling Flake (afterwards named Baldiston's Queen Adelaide), Mr. Baldiston. Seedling Picotee (afterwards named Jessup's Princess Victoria), Mr. Jessup.

Woodbridge Flower Show.—At the Annual Show of Carnations and Picotees, at Woodbridge, on the 29th of July, the prizes were adjudged by Messrs. Sheming, Cooper, and Gross: —

Pan of six Flowers: 1. Foxhunter, Rainbow, Prince Leopold, Madame Mara, Turner's Princess of Wales, and Fletcher's Duchess, Mr. Lee; 2. Davey's Duchess, Churchill's Duke of Wellington, Martin's King, Strong's Esther, and Fletcher's Duchess, Mr. Churchill; 3. Turner's Princess of Wales, Thornicroft's Blucher, Fletcher's Duchess, Woollard's Lord High Admiral, Davey's Duchess, and Hartesley's Freedom, Mr. Woollard. — Picotee: Woollard's Miss Bacon, and Gillingwater's Mrs. Green, Mr. Marston.

Woollard's Picotee, Miss Bacon, was allowed to be a most beautiful flower of the first class; it was raised, some three or four years since, by Mr. Woollard of the Royal William, Ipswich, who has now a good stock of it. The carnations raised by C. Churchill, Esq., were very much admired. (*Suffolk Chronicle*, Aug. 7. 1830.)

WORCESTERSHIRE.

Vale of Evesham Horticultural Society.— June 16. The pines on the table could not be less than from 30 to 40 lbs. weight, and were sent from the pineries of the Marquess of Hertford, H. Tracey, Esq., and Mr. Butcher of Stratford on Avon. The pine that attracted the principal notice of the growers was from H. Tracey, Esq.'s, and ripened to exquisite flavour without fire or tan-heat, on an entirely new method adopted by Mr. Balls (Mr. Tracey's gardener), who has kindly promised to furnish the Society with a descriptive account of his plan of growing the same, which the Society will feel a pleasure in making public, when received. Prizes were awarded as under: —

Plants. Stove or Green-house: 1. Kalosánthes versícolor, N. Hartland, Esq.; 2. *E*rica ventricòsa supérba, E. Rudge, Esq.; 3. Melaleùca fúlgens, Mr. Smith. — Hardy Annuals: 1. *P*apàver somníferum var. fimbriàtum, Mr. Drury; 2. *P*apàver somníferum var. rùbrum pállidum, Rev. Mr. Shute.

Flowers. Ranunculuses. Dark: 1. Condorcet, Mr. Smith; 2. Pizarro, Mr. Mayfield. Purple: 1. Beauté frappante, Mrs. Eyston; 2. Variat, Mr. Banister. Crimson: 1. Prince Henry, Mr. Smith; 2. Alphonso, Edward Rudge, Esq. Shaded: 1. Duchess of Wurtemberg, Mr. Mayfield; 2. Prince Galitzin, Mrs. Eyston; 3. Thompson's Queen, Mr. Whitford; 4. Jaune agréable, Rev. Mr. Stillingfleet. Red Ground, Yellow-striped: 1. Mélange des Beautés, E. Rudge, Esq.; 2. Ferdinando, Mr. Fulton. White Ground, Striped: 1. Phanta, Mr. Mayfield; 2. La Belle Philippe, Mr. Smith. Orange: 1. Brabançon, Mr. Mayfield; 2. Orange Cockade, Mr. Hodges. Sulphur; 1. Model of Perfection, Mr. Eyston; 2. Pretiosa, Mr. Whitford. White: 1. Blanche, Mr. Mayfield; 2. Hermes, Mr. Fulton.— Pinks. Purple-laced: 1. Dry's Lord Exmouth, Mr. Hunt; 2. Beauty of Bath, Mr. Hodges. Red-laced: 1. Harcourt's Seedling, and 2. Bexley Hero, Mr. Hodges; 3. Humber's Regulator, Mrs. Hunt. Stars: 1. Westley's Heroine, Mr. Hodges; 2. Mayfield's Seedling, Mr. Barnes; 3. Mayfield's Miss Powell, Mr. Fulton. — Roses: 1. Duke of Wellington, Mr. Balls; 2. Moss Damask, Mrs. Hunt; 3. *R*òsa bícolor, Scotch, Mr. Izod; 4. *R*òsa sulphùrea, Mr. Goodall; 5. Maiden's Blush, Mrs. Hunt; 6. White Moss, Rev. Mr. Shute; 7. Rose Unique, Mr. Goodall.

Fruit. Strawberries: 1. Keen's Seedling, Mr. Lavender Best-flavoured: 1. Keen's Seedling, Mr. Hunt; 2. Black Taunton, Mr. Charles; 3. Comberton, Mr. Smith. — Melons, Succada, Edward Rudge, Esq. — Cherries. Black: 1. May Duke, Mrs. Lavender. White, Elton Hearts, Gen. Marriott.

Extra-Prizes. Pine (a Queen Pine, raised without tan or flue heat), Mr. Balls. Grapes, Black Hamburgh, Mr. Fulton. Double Russian Stock: Scarlet, Thos. Blayney, Esq.; White, Mrs. Eyston. *Pæònia* Hùmei, Mr. Smith. (*Worcester Herald*, June 25.)

YORKSHIRE.

Hull Floral and Horticultural Society.—May 23. The flowers, &c., were adjudged by Messrs. Carr and Lumb, and Mr. A. Parker of York, who placed them as follows:—

Plants. Green-house, Kálm*ia* latifòlia, Mr. Wm. Bolton.

Flowers. Premium, Comte de Vergennes, J. C. Cankrien, Esq.—Bybloemens. Flamed: 1. Sir Joseph Banks, Mr. Percy; 2. Washington, Mr. Burman; 3. Alexander Magnus, and 4. Washington, Mr. Deighton; 5. St. Germain, Mr. Cankrien. Feathered: 1. Bienfait, Mr. Burman; 2. Bienfait, and 3. Princess Augusta, Mr. Allinson; 4. Princess Anne, Mr. Percy; 5. Bienfait, Mr. Deighton. — Bizarres. Flamed: 1. Pizarro, Mr. Burman; 2. Sidney Smith, Mr. Wharton; 3. Sanzio, Mr. Percy; 4. La Cantique, and 5. Abercrombie, Mr. Cankrien. Feathered: 1. Surpasse-Catafalque, Mr. Percy; 2. Grand Cairo, Mr. Cankrien; 3. Briffet's Yellow, Mr. Norman; 4. Black Prince, Mr. Burman; 5. Duc de Savoie, Mr. Percy. — Roses. Flamed: 1. Sans Egal, Mr. Cankrien; 2. Princess Royal, Mr. Norman; 3. Grise Primo, and 4. Heroine, Mr. Burman; 5. Rose Superbe, Mr. Bell. Feathered: 1. Comte de Vergennes, Mr. Cankrien; 2. Heroine, and 3. Do Little, Mr. Burman; 4. Do Little, and 5. Michael de Lisle, Mr. Deighton. Seedling, Mr. Bell.— Pelargoniums. White Ground, Macránthon, Mr. Wm. Bolton. Coloured Ground, Moor's Victory, Mr. Wm. Bolton.

Culinary Vegetables. Lettuce. Cos: 1. and 2. Mr. Wharton. — Potatoes. Best plate of Kidney, Mr. T. P. Smithson. — Best plate of Vegetables: Cucumber, Wadsworth's Earl Grey, Mr. D. Brown. (*Hull Advertiser*, May 27.)

June 20. The judges placed the flowers, &c., according to the following list:—

Plants. Best Green-house, Mr. Joseph Calvert.

Flowers. Ranunculuses. J. C. Parker, Esq.'s premium (for the best flower), Princess Amelia, Mr. S. Beecroft; Rose Toussaint (Mr. T. Lockhart's), Mr. J. Heward; Goliath (the Society's), Mr. S. Beecroft. Dark: 1. Naxara, and 2. Voctonnox, Mr. Beecroft; 3. Voctonnox, Mr. Allinson; 4. Shannon, Mr. Percy; 5. Naxara, Mr. Bell; 6. Voctonnox, Mr. Beecroft. Light Purple, Grey, and Ash: 1. Violet Foncé, Mr. Bell; 2. Variat, Mr. Beecroft; 3. Violet Foncé, Mr. Deighton; 4. Hortensius, Mr. Allinson; 5. Jeanne de Pompadour, Mr. Percy; 6. Mr. Allinson. Scarlet, Crimson, and Pink: 1. Earl Moreland, Mr. Percy; 2. Scarlatina, Mr. Allinson; 3. Lucretia, Mr. Beecroft; 4. Earl Moreland, Mr. Percy; 5. Lucretia, Mr. Bell; 6. Scarlatina, Mr. Allinson. Orange, Yellow, and Buff: 1. and 2. Goliath, Mr. Beecroft; 3. Adrian, Mr. Bell; 4. Adrian, Mr. Beecroft; 5. Voltaire, Mr. Percy; 6. Fiesco, Mr. Beecroft. Spotted and edged, on White Ground: 1. Rose Toussaint, Mr. Heward; 2. La Téméraire, 3. Benjamin, 4. and 5. Crassus, Mr. Beecroft. Spotted and edged, on Yellow Ground: 1. and 2. Princess Amelia, 3. Duchess of Buccleugh, Mr. Beecroft; 4. Kleine Agamemnon, and 5. Flos Solis, Mr. Percy; 6. Pretiosa, Mr. Beecroft. Stripes on Yellow Ground: 1. Mélange des Beautés, Mr. Heward; 2. Mélange des Beautés, Mr. Deighton; 3. Favorite Mignonne, Mr. Wharton; 4. Favorite Mignonne, Mr. Heward; 5. Mélange des Beautés, Mr. Beecroft; 6. Mélange des Beautés, Mr. Deighton. Stripes on White Ground: 1. and 2. Téméraire, Mr. Bell; 3. Cour de France, Mr. Allinson; 4. and 5. Alphonsus, and 6. Planta, Mr. Beecroft. White and shaded White: 1. Argus, Mr. Allinson; 2. Skiddaw, Mr. Deighton; 3. Laodicea, 4. Queen Caroline, and 5. Argus, Mr. Beecroft; 6. Princess Alexandrina Victoria, Mr. Percy. — Stocks. Brompton: 1. and 2. Mr. Brown, nurseryman, Barton; 3. Mr. Allinson. (*Hull Gazette*, June 25.)

July 4. The prizes were awarded as under: —

Flowers. Pinks. Purple-laced: 1. (premium) Bow's Claudius, Mr. Priest; 2. Lustre, Mr. Bell; 3. Lock's Glory of Newport, Mr. Beecroft; 4. Hewson's Miss Beresford, Mr. D. Brown; 5. and 6. Bow's Lustre, Mr. Burman. Red-laced: 1. Goulton's George the Fourth, Mr. Burman; 2. Goulton's George the Fourth, Mr. Bell; 3. Duchess Wellington, Mr. Wadsworth; 4. and 5. Goulton's George the Fourth, Mr. Priest; 6. Suwarrow, Mr. Beecroft. Black and White: 1. Smith's Mariner, and 2. Davey's Eclipse, Mr. Woolley; 3. Duchess of Devonshire, Mr. Beecroft; 4. Duchess of Devonshire, Mr. Woolley; 5. Venus, Mr. Beecroft; 6. Windsor Castle, Mr. Wadsworth. — Roses. Moss: 1. Tickhill, Mr. Woolley; 2. Tickhill, Mr. Allison; 3. Tickhill, Mr. Woolley; 4. Tickhill, Mr. Allison; 5. Moss Provence, Mr. Brown, Barton; 6. Moss Provence, Mr. Wadsworth. Plain: 1. Grand Swiss, Mr. Wadsworth; 2. Unique, and 3. Grand Crimson, Mr. Allison; 4. Blush, Mr. Wadsworth; 5. Tuscany, Mr. Allison; 6. Unique, Mr. Priest.

Fruit. Strawberries: 1. Wilmot's Superb, Mr. Wadsworth; 2. Keen's Seedling, 3. Wilmot's Superb, and 4. Manchester Hero, Mr. Smithson. (*Hull Gazette*, July 9.)

July 28. The umpires were Mr. C. Lambert, Mr. J. G. Lumb, and Mr. Benj. Ely of Rothwell Haigh. Prizes were distributed as follows: —

Plant. Green-house, Mr. Charles Foster.

Flowers. Ely's Mayor of Ripon (J. C. Parker, Esq.'s premium), Mr. H. Green; Bellerophon (Society's premium), Mr. W. B. Percy. Pink Bizarre: 1. and 2. Paul Pry, Mr. Wm. Burman; 3. Paul Pry, Mr. D. Brown; 4. Heward's Kingston, Mr. Wm. Burman; 5. Paul Pry, Mr. M. Bell; 6. Paul Pry, Mr. W. Burman. Scarlet Bizarre: 1. Ely's Mayor of Ripon, Mr. H. Green; 2. William the Fourth, Mr. J. Heward; 3. William the Fourth, Mr. D. Brown; 4, 5, and 6. Wilde's Surpasse-Perfection, Mr. Wm. Burman. Purple Flake: 1. Bellerophon, and 2. Major Cartwright, Mr. W. B. Percy; 3. Bates's Wellington, 4. and 5. Turner's Princess Charlotte, Mr. Wm. Burman; 6. Wilde's Mary Anne, Mr. Samuel Beecroft. Pink Flake: 1. Clegg's Smiling Beauty, Mr. Wm. Burman; 2. Clegg's Smiling Beauty, Mr. R. Deighton; 3. Pollitt's Triomphe Royal, Mr. Wm. Burman; 4. Pollitt's Triomphe Royal, Mr. D. Brown; 5. and 6. Triomphe Royal, Mr. J. Wadsworth, gardener to J. Eggington, Esq. Scarlet Flake: 1. Andrew Marvel (seedling), and 2. Madame Mara, Mr. M. Bell; 3. Madame Mara, Mr. S. Beecroft; 4. Mount Etna, Mr. W. B. Percy; 5. Mount Etna, Mr. Burman; 6. Salamander, Mr. M. Bell. — Picotees. Purple-edged: 1. and 2. Ely's High Admiral, Mr. Wm. Burman; 3. Ely's Elizabeth, Mr. Wm. Woolley; 4, 5, and 6. Mary Queen of Scots, Mr. M. Bell. Red-edged: 1. Cato, Mr. Beecroft; 2. and 3. Queen Adelaide, 4. Pearson's Chilwell Beauty, and 5. and 6. Queen Adelaide, Mr. Heward. Yellow Ground: 1. Goldfinch, Mr. D. Brown; 2. and 3. Goldfinch, Mr. Burman; 4. Emily's Pride, Mr. Norman; 5. Stadtholder, Mr. H. Green; 6. Stadtholder, Mr. Brown, Barton. Seedling, Mr. John Heward. — Carnations. Best Seedling, Mr. James Wadsworth.

Fruit. Grapes Black: 1. Black Hamburgh, Mr. H. Blundell; 2. Black Hamburgh, Mr. T. Holmes; 3. Black Hamburgh, Mr. T. P. Smithson, &c. White: 1. Syrian, Mr. J. Wadsworth; 2. Tokay, Mr. Henry Blundell; 3. Syrian, Mr. Thomas Holmes; 4. Frontignac, Mr. T. P. Smithson. — Melons: 1. Netted Cantaloup, Mr. J. England; 2. Hague's Pizarro, Mr. Henry Blundell; 3. Netted Cantaloup, Mr. J. England; 4. Netted Rock, Mr. W. Norman. — Gooseberries. Red, Roaring Lion, Mr. Wadsworth. Green, Ocean, Mr. Wadsworth. Yellow, Rockwood, Mr. Wadsworth. White, Eagle, Mr. Wadsworth. — (*Hull Mercury*, Aug. 2.)

Sheffield Horticultural Society. — *May* 4. There were several pots of Keen's seedling strawberries, one of which contained sixty-three ripe strawberries, some of them measuring near 6 in. in circumference. These were sent by Mr. Paxton, from the gardens of His Grace the Duke of Devonshire. Mr. Lambie, gardener to Sir George Sitwell, sent some cut flowers, very excellent of their kind, with other articles of interest. Prizes were awarded for the following fruits, vegetables, &c.: —

Plants. Stove: 1. Blètia Tankervílliæ, Mr. Paxton; 2. Sinníngia velutìna, and 3. Sinníngia villòsa, Mr. Lambie. Green-house: 1. E'pacris grandiflòra, and 2. Azàlea índica álba, Mr. Paxton; 3. Cáctus speciòsa, Mr. Hallet; 4. Cyrtánthus angustifòlius, and 5. Amarýllis formosíssima, Mr. Weldon; 6. Yellow China Rose, 7. Corræ'a speciòsa, and 8. E'rica nigríta, Mr. Paxton. Herbaceous, Tríllium grandiflòrum, Mr. Crowder.

Flowers. Auriculas. Pan of four (comprising one of each class, with not less than four pips on a stem): 1. Lee's Colonel Taylor, Ploughboy, Taylor's Glory, Self-coloured, not named, Mr. Joseph Waterhouse; 2. Moore's Jubilee, Morning Star, Incomparable, True Blue, Mr. John Revill. Green-edged: 1. Kenyon's Ringleader, and 2. Rider's Waterloo, Mr. William Archer; 3. Hudson's Leopold, Mr. John Revill; 4. Lee's Colonel Taylor, Mr. Jos. Waterhouse; 5. Trafalgar, Mr. John Revill; 6. Taylor's Ploughboy, Mr. James Wild. Grey-edged: 1. Taylor's Ploughboy, Mr. James Wild; 2. Kenyon's Ringleader, Mr. J. Driver; 3. Seedling, and 4. Thompson's Revenge, Mr. William Archer; 5. Lord John Russell, and 6. Rider's Waterloo, Mr. Matthew Addy. White-edged: 1. Hallamshire, Mr. John Revill; 2. Taylor's Glory, Mr. W. Archer; 3. Hughes's Pillar of Beauty, Mr. James Wild; 4. Leigh's Bright Venus, Mr. J. Revill; 5. Pott's Regulator, Mr. J. Driver; 6. Popplewell's Conqueror, Mr. Joseph Waterhouse. Self-coloured: 1. Grimes's Flora's Flag, 2, 3, and 4. Seedling, Mr. Wm. Archer; 5. Bishop of Lichfield, Mr. John Revill; 6. Bishop of Lichfield, Mr. John Driver. — Polyanthuses. Dark Ground: 1. Alexander, Mr. John Revill; 2. Prince Regent, Mr. Wm. Archer; 3. George the Third, and 4. William the Fourth, Mr. Joseph Waterhouse; 5. Billington's Beauty, Mr. Wm. Archer; 6. Turner's Emperor, Mr. John Revill. Red Ground: 1. Coxe's Prince Regent, Mr. J. Driver; 2. Crownshaw's Invincible, 3. Pearson's Defiance, and 4. Stead's Telegraph, Mr. Wm. Archer; 5. Seedling, Mr. Joseph Waterhouse; 6. Seedling, Mr. Wm. Archer.

Fruit. Pine-apple, New Providence, Mr. Paxton. — Strawberries (plate of): 1. Keen's Seedling, and 2. Grove-end Scarlet, Mr. Paxton. Six pots, Keen's Seedling, Mr. Paxton.

Culinary Vegetables. Rhubarb, Judds, Mr. Paxton. — Broccoli, White's Imperial, Mr. Fisher.

Extra-Prizes. *Eupatòrium* ceanothifòlium, Rev. W. Bagshawe. Agapánthus umbellàtus, Rev. —— Blackstone.

August 3. This was the Third Exhibition, and the following prizes were awarded: —

Plants. Green-house: Kalosánthes coccínea, Mr. Walker; *E*rìca *a*lbica, Mr. Paxton.

Flowers. Carnations. Scarlet Bizarres: 1. and 2. Seedling, Mr. Archer; 3. Wells's Perfection, 4. King Solomon, and 5. Seedling, Mr. Waterhouse; 6. Sir Isaac Newton, Mr. Archer. Pink Bizarres: 1. Gregory's King Alfred, and 2. Seedling, Mr. Archer; 3. Gregory's King, Mr. Waterhouse; 4. Wakefield's Paul Pry, and 5. Seedling, Mr. Archer; 6. Old England, Mr. Revill. Scarlet Flakes: 1. Fletcher's Lord Anson, Mr. Archer; 2. Bowton, Mr. Waterhouse; 3. and 4. Seedling, and 5. Blucher, Mr. Archer; 6. James's Jupiter, Mr. Waterhouse. Purple Flakes: 1. Princess Charlotte, 2. Lord Mansfield, and 3. Wood's Commander, Mr. Archer; 4. Seedling, Mr. Waterhouse; 5. and 6. Seedling, Mr. Archer. Rose Flakes: 1. Duchess of Devonshire, Mr. Archer; 2. and 3. Seedling, Mr. Waterhouse; 4. Seedling, Mr. Archer. — Picotees. Purple-striped: 1. Seedling, Mr. Waterhouse; 2. and 3. Seedling, Mr. Archer. Red-striped: 1. Kenny's Incomparable, Mr. Waterhouse; 2. Seedling, Mr. Archer; 3. Will Stukely, and 4. Mayor of Northampton, Mr. Waterhouse; 5. Seedling, Mr. Archer; 6. Turner's Jupiter, Mr. Waterhouse. Purple-feathered: 1. Duke of Norfolk, Mr. Muscroft; 2. and 3. Cleopatra, Mr. Revill; 4. Seedling, Mr. Waterhouse; 5. Seedling, Mr. Archer.

Fruits. Grapes. White: Providence, Mr. Butcher. Black: 1. and 2. Hamburgh, Mr. Harrison; 3. Constantia, Mr. Wilson. White: 1. and 2. White Muscat, and 3. Frontignac, Mr. Wilson. — Melons: 1. Mr. Wilson; 2. Royal Cantaloup, Mr. Lambie. — Peaches, forced: 1. Teton de Venus, Mr. Wilson; 2. Royal George, Mr. Butcher. — Nectarines (forced), White, Mr. Butcher. — Plate of Gooseberries. Red, Roaring Lion, Mr. Muscroft. Yellow, Gunners, Mr. Muscroft. Green, Anglers, Mr. Muscroft. White, Eagles, Mr. Muscroft. — Cherries, Morello, Mr. Lambie. — Strawberries, Alpine, Mr. Paxton. — Orange Tree, Myrtle-leaved, Mr. Lambie.

Culinary Vegetables. Dish of Beans, Long Pod, Mr. Wilson. French Beans, China Dwarf, Mr. Thompson. Celery, White, Mr. Abraham. Lettuce, Malta, Mr. Taylor. Turnips, Scarisbrick, Mr. Walker. Onions, Tripoli, Mr. Lambie. Cucumbers, Prize-Fighter, Mr. Milner. (*Sheffield Iris*, Aug. 9.)

West Riding Horticultural Society. — The First Meeting of this excellent Society was held in the Music Hall, Wakefield, on Wednesday afternoon. The saloon was tastefully decorated. The hardy bouquets, furnished by Dr. Crowther, Mr. Hadfield, Mr. John Billington, Mr. James Cooper, and Mr. Wice, gave to the scene a pleasing effect. The one furnished by Dr. Crowther, and which decorated the chair, contained no less than 212 distinct plants. The show of vegetables, fruits, and flowers was splendid and gratifying. The Rev. J. G. Morris officiated in an able manner as chairman, and opened the business of the Meeting in a neat speech; he likewise distributed the prizes which had been awarded by the judges. The arrangements did great credit to the secretary (the Rev. Dr. Sisson), and to the curators (Mr. J. Hadfield and Mr. J. Billington). During the afternoon, the Rev. S. Sharp exhibited some apples which had been kept two years. In answer to a question from the chairman, Mr. Sharp stated that, in order to preserve the apples, he had kept them as much as possible from light and air. (*Sheffield Iris*, August 9.)

SCOTLAND.

The Caledonian Horticultural Society. — The Annual Meeting was held on Sept. 1. The following is a copy of the Report of the Committee: —

1. For the best three sorts of Peaches from the open wall, to Mr. James Macdonald, gardener to his Grace the Duke of Buccleugh: the kinds being new Red Magdalene, Royal George, and Noblesse; and six competitors having appeared. — 2. For the best two sorts of Peaches from flued walls, to Mr. George Shiells, gardener to the Right Hon. Lord Blantyre, Erskine House: kinds, the Gallande and Noblesse: seven competitors. — 3. For the best two sorts of Nectarines, either from open wall, hot wall, or peach-house, to Mr. John Robertson, gardener to the Right Hon. Lord Gray, Kinfauns Castle: kinds, the Elruge and Scarlet; no fewer than nine competitors. — 4. For the best two sorts of Plums, not generally cultivated, to Mr. James Anderson, gardener to John Bonar, Esq., of Ratho House: the kinds being the Caledonian Plum and Red Diaprée; and two competitors having appeared. — 5. For the best three sorts of summer Pears, to Mr. James Stuart, gardener to Sir John Hope, Bart., of Pinkie: kinds, Jargonelle, late Citron des Carmes, and White Beurrée; two competitors. — 6. For the largest bunch of Grapes of any variety, with the name, to Mr. G. Shiells, gardener to the Right Hon. Lord Blantyre, Erskine House: kind, the Nice Grape, weighing 6 lbs. The Committee having experienced considerable difficulty on this article, recommended that a second prize be awarded for a very large and fine bunch of the white Lombardy Grape, to Mr. Daniel Cunningham, gardener to Sir Archibald Campbell, Bart., Garscube. — 7. For the largest and highest-flavoured bunch of any new kind of grape lately introduced, to Mr. James Scott Thomson, gardener to Lord Viscount Strathallan, Strathallan Castle. — 8. For the largest and highest-flavoured bunch of any of the Frontignac Grapes, to Mr. Archibald Reid, gardener to the Hon. Robert Lindsay, Balcarres; eight competitors having appeared. — 9. For the largest and highest-flavoured bunch of the White Muscat of Alexandria, to Mr. John Kinment, gardener to Miss Spence Yeamen of Murie. — 10. For the best Otaheite Pine-apple, to Mr. Alexander Lauder, gardener to Colonel Harvie, Castle Semple. — 11. For the best three different kinds of Melons, eight competitors, forming the finest display of melons ever witnessed by the Committee. After a very careful comparison and trial, the medal was awarded to Mr. Wm. Oliver, gardener to the Right Hon. the Earl of Rosslyn, Dysart House: kinds, the Melville, Ispahan, and Ionian.

The Committee further reported, that the price offered for the greatest variety of different kinds of fruits, of fine quality, was found to be due to Mr. James Smith, gardener to the Right Hon. the Earl of Hopetoun, who sent nineteen different kinds, all of them the finer fruits. The Committee, in conclusion, stated that a very rich show of double anemone-flowered georginas took place, showing that the culture of this highly ornamental plant has attained great perfection in Scotland; and it was determined that the medal was due to William Patison, Esq., of Williamfield, near Newhaven. Handsome presents of fruits for the dessert were received from Mr. Wauchope of Edmonstone, Mr. Anderson of Mordun, and Mr. Gibson Craig of Riccarton; and a rich supply of grapes was furnished by Mr. Barnet, from the Society's garden. At the dinner, the chairman (Professor Hope) in drinking the healths of Professor Graham, and Mr. M'Nab, superintendent of the royal botanic garden, stated that a more beautiful garden, for its size, was not to be seen in the empire, either for the manner it was laid out in, the luxuriant growth of its evergreens, or for the splendid display of its exotic plants. He (Dr. Hope) had been in the south, and examined several similar establishments, but he had the satisfaction, on coming away, to be able to declare he had seen nothing equal to the royal botanic garden of Edinburgh. Professor Dunbar spoke to the same effect; and remarked that Mr. M'Nab's collections of the tribe *E*rìca was perhaps unequalled in Europe. With him, in place of the plants being small and dwarfish, they assumed the appearance of large trees and bushes. Mr. M'Nab had a work on the rearing of this beautiful tribe in course of publication. As to the botanic garden, he (Professor Dunbar) knew nothing to compare with it. (*Edinburgh Observer*, Sept. 2.)

ABERDEENSHIRE.

Aberdeenshire Horticultural Society. — *May* 3. The First Competition and Show took place, and the judges decided as follows: —

To David Gairns, gardener to J. M. Nicholson, Esq., of Glenbervie, for the best three Seedling Auriculas. To Mr. J. I. Massie, for the first three Stage Polyanthuses; they were the first prize seedlings last year. To Captain Cline, for the first three Seedling Polyanthuses. To Alex. Brown, gardener to J. Garioch, Esq., of Heathcot, for the second Seedling Polyanthus. To Mr. Massie, for the third Seedling Polyanthus. To Mrs. Rae of Northfield, for the first and second three bottles each of Home Wine; the former Gooseberry Champagne, the latter Black Currants and Rasps. To Mr. Young of Cornhill, for the third Home Wine, Gooseberry Champagne. Several very rare articles were brought forward for competition, particularly strawberries and potatoes, from the garden of D. Young, Esq., of Cornhill; also apples, of the crop of 1829, in excellent preservation, from the garden of James Hadden, Esq.; and the tables were otherwise decorated with some very fine green-house plants, from the Ferryhill nursery. The special committee reported, that they had unanimously found Mr. Wm. Davidson, jun., Causewayend, best entitled, on account of his productions and communications during last year, to be recommended to the London Horticultural Society, as meriting the large silver medal given annually by it. The following gentlemen were unanimously elected honorary and corresponding members of the Society, viz.: — Dr. Wallich, Superintendent of the H. E. I. C. Botanic Garden, Bengal; the Rev. Dr. Carey, Professor of the College at Fort William, Calcutta; Sir James M'Grigor, Bart., Director-General of the Medical Department; John Lindley, Esq. Professor of Botany in the London University; and Dr. James Douglas, Quebec.

At the March Meeting of the Society, Major-General Hardwicke, late of the Hon. East India Company's Artillery, Bengal, was admitted an honorary and corresponding member. (*Aberdeen Journal*, May 18.)

May 25. The Second Competition and Show took place, and the judges decided as follows: —

To Mr. Alex. Diack, nurseryman, Mile End, for the first and second best twelve Tulips, three of each, Incomparable Verports, Cherry and Rose, Bybloemens, and Bizarres. To Mr. Thomas Milne, nurseryman, Sunnyside, for the first three pots of Strawberries (Keen's Seedling), very fine; and for the second best three pots of Strawberries (Roseberry), also very fine. An extra-premium was awarded to Mr. Alex. Diack, Mile End, for six Seedling Tulips, that were sown in 1813, from seeds saved from the sweet-scented, and only perfectly broke this season; the whole group having the fragrance of the parent plant. The Society's large silver medal was awarded to Mr. Alexander Diack, for the tulips, being the best articles at the Show; and the Society's small silver medals were awarded to all the other first articles, as well as for the extra-prize. (*Aberdeen Journal*, June 1.)

June 22. At the Third Competition and Show prizes were awarded as under: —

To Mr. Robert Davidson of Elmfield Cottage, for twelve Kidney Potatoes. There were no other potatoes presented for competition. To Mr. A. Diack, Mile End, for the second best Irises, five of which were Spanish (bulbous). The extra-medal to David Gairns, Glenbervie, for a group of beautiful Seedling Pelargoniums. The Society's large silver medal was awarded to Mr. Robert Davidson, Elmfield Cottage, for his productions at the Competition; and small medals to the other persons also having first articles. Miss Young of Sheddocksley was elected a member of the Society. There was a large group of very rare and fine green-house plants, from the gardens of Mr. Young of Cornhill; among which, a beautiful Erythrìna *l*aurifòlia, nearly 9 ft. high, in flower, very much attracted the attention of the visiters. From the garden of Mr. Cheyne of Loch-head, a very fine *N*èrium spléndens, in full flower, and some beautiful ericas; and from the garden of Ballater House, a basket of very fine roses, consisting of the double and single yellows, and various others of great beauty, and in full bloom. (*Aberdeen Journal*, June 29.)

July 13. At the Fourth Competition and Show the judges awarded the prizes as follows: —

To Mr. Wm. Anderson, gardener to David Young, Esq., of Cornhill, for the best six Seedling Carnations. To Captain John Clyne, for the first and second best six Seedling Pinks. To Mr. David Gairns, Glenbervie, for the best and second best Seedling Rosc. To Mr. Alexander Malcolm, Damside, for the first and second best quart of Strawberries, seedlings raised by himself. To Mr. William Anderson, Cornhill, for the third best quart of Strawberries (Keen's Seedling). The extra-prize to George Low, Ballater House, for a basket of seedling Roses. The Society's large silver medal was awarded to Mr. David Gairns, Glenbervie, for his various productions on this occasion; and the small medal to those having the other first articles. To ornament the table, there was a large group of very fine green-house plants, from the nursery of Mr. Fraser, Ferryhill. Sir Edward Ryan, one of the Judges of the Supreme Court of Bengal; Dr. John Grant; James Calder, Esq.; and George James Gordon, Esq., Calcutta, were elected honorary members. The Rev. Francis Forbes, Sunnybank; and Mr. James Smith, gardener to Gavin Hadden, Esq., of Union Grove, were also elected ordinary members of the Society. (*Aberdeen Journal*, July 20.)

FORFARSHIRE.

Dundee Horticultural Society. — *May* 3. The Spring Meeting of this Society was held in the Caledonian Hall, Castle Street. The successful competitors were as follows: —

Mr. John Hampton, gardener, Crescent House, for seedling Auriculas. Mr. James Smith, gardener, Ellangowan, for first and second seedling Polyanthuses, and the sweepstakes for seedling Auriculas. Mr. Thomas Spalding, gardener, Arthurstone, for first seedling Auriculas. Mr. John Stewart, Dudhope nursery, for the second seedling Polyanthuses. Some flowers of double georginas and carnations, and a fine variety of violets and rainbow auriculas, were produced from Arthurstone; some fine seedling double wallflowers from Dudhope nursery; and some pretty heaths, and beautiful *C*ácti, and other plants, from Scouringburn nursery. (*Dundee Courier*, May 10.)

July 29. The successful competitors were as follows: —

Mr. James Smith, gardener, Ellangowan, for best seedling Pelargoniums. Mr. Thomas Spalding, gardener, Arthurstone, for the second seedling Pelargoniums, first seedling Roses, first Rose Strawberries, first seedling Strawberries, and first Cos Lettuce. Mr. Patrick Adam, gardener, Roseangle, for the second seedling Roses. Mr. James Kettle, gardener, Glendoick, for the second Bath Strawberries, first Bishop's orange Strawberries, heaviest Strawberries, first seedling, and heaviest Gooseberries, and first Imperial Lettuce. Mr. Alexander Gowck, gardener, Mayfield, for the first Bath Strawberries, first seedling Rasps, and second seedling Gooseberries. Some very beautiful balsams and hollyhocks were produced from Ellangowan; some pretty seedling violets from Mr. Newall's garden, Hawkhill Place; some seedling georginas from Glendoick; some anemone georginas and pinks from Lilybank nursery; and a very superb variety of double georginas from Scouringburn nursery, Lilybank nursery, Cortachy, Glendoick, Ballindean, and Arthurstone; some fine ripe pears from Mr. Martin's garden, Roseangle; some large savoys from Carolina Port; and some pretty carnations, not claimed; all of which caused admiration, and some of them amazement. (*Dundee Courier*, Aug. 2.)

LANARKSHIRE.

Glasgow Horticultural Society. — *Aug.* 12. We noticed three of King Charles's pocket melon, and two large citrons, from Castle Semple; five very large pine-apples, probably weighing nearly 5 lbs. each, and some fine peaches, from Woodhall; very large gooseberries, one of which weighed 1¼ oz., from Mr. Warnock; large gooseberries from Leven Grove; very large Morello cherries, from Cams-Erskine; some large figs, from Buchanan House. Two handsome and large white Turkey cucumbers, from Mount Stewart; a very large gourd, from Cams-Erskine; a collection of gourds, from Woodlands; a stock of German greens, from Mr. Rogers, Kilmarstock, measuring about 9 ft. in circumference. An excellent show of peas, of seven varieties, and some of rare quality, and also a number of other things, which were within one vote of gaining the second prize, were presented from Newton. A selection of the newest and most beautiful annuals and biennials, from Mrs. Wilkie, Uddingston, including double Canterbury bells, *V*erbèna *A*ublètia, Clárk*ia* pulchélla, Tithòn*ia tagetiflòra*, a splendid collection of double georginas, one hundred and twenty varieties, &c.; and many fine specimens of green-house and hardy evergreens, shrubs in pots, &c., from Messrs. Cowan and Co.'s nursery; a few choice green-house and hot-house plants, including some fine heaths, and a collection of double georginas of the finest varieties, from the botanic garden; about sixty of the most choice varieties of double georginas, from Calder; some fine green-house plants, from Jacob Dixon, Esq., Dumbarton; a large show, all named, of cut flowers, annual, biennial, and perennial, and of deciduous shrubs in flower, and of evergreen shrubs in pots, from the nursery of Messrs. Austin and M'Aslan, and from the nursery of Messrs. M. and J. Brown. In competition, there were 18 melons, 26 gourds, 12 lots plums, 85 varieties of vegetables, 130 species and varieties of biennial and perennial flowers, 70 species and varieties of the newest and finest annuals. [A number of prizes were awarded; but, as the names of the sorts are not given, we omit them. (See p. 626.)] (*Glasgow Chronicle*, Aug. 10., and *Glasgow Free Press*, Aug. 13.)

RENFREWSHIRE.

West Renfrewshire Horticultural Society. — *May* 25. At the Competition Meeting by the members of this Society, a very fine display of horticultural produce was made, and prizes were awarded; which, however, we omit, for the reasons stated above.

Mr. R. Guthrie, gardener to Mrs. G. Robertson, Greenock, exhibited a beautiful heath, with another much admired green-house plant called Erythrìna *C*rísta gálli, measuring in altitude 5 ft., and having thereon fifty-two flowers. Mr. Guthrie also exhibited some very good early potatoes. Mr. Malcolm Service contributed some beautiful geraniums, Pelargònium Rosa Matilda, Pelargònium Peytòn*iæ*, Pelargònium Rowàn*ii*; as also a number of very fine heaths: *E*rìca hýbrida, *E*rìca ventricòsa supérba, *E*rìca perspícua. Mr. James Kilpatrick exhibited some excellent spinach, and a lot of beautiful ranunculuses. A parcel, containing asparagus, cabbages, tulips, cucumbers, &c., was supplied by Mr. Wm. Knox, gardener to Mrs. Dixon, Leven Grove, Dumbarton, but, in consequence of their late arrival, were not put in competition; but for which circumstance Mr. Knox would have stood first for asparagus, cucumbers, and cabbages. A beautiful *S*pártium multiflòrum, in flower, was contributed by Mr. Malcolm Service; and a very fine double-flowering *U*'lex europæ̀a, by Mr. Adam Melross. (*Greenock Advertiser*, May 31.)

June 29. Prizes omitted as above. Among the show articles were: —

May Duke Cherries: 1. Mr. Henry Knox, gardener to Jacob Dixon, Esq., Dumbarton. — Early Dutch Turnip: 1. Mr. John Sinclair; 2. Mr. Malcolm Service.

In addition to those above enumerated, many others were contributed. Mr. Malcolm Service exhibited some very fine balsams and geraniums, with a beautiful exotic, called Agapánthus umbellàtus, all in flower. Some very fine cucumbers, by the members. Mr. Robt. Guthrie, gardener to Mrs. George Robertson, Greenock, exhibited some beautiful exotics, Maránt*a* zebrìna, Calceolària *s*alviæfòlia, Gloxín*ia* speciòsa, *E*rìca prǽgnans, *E.* ventricòsa, *E.* spùria, and *E.* refléxa, all in flower; Mr. Guthrie also presented a lot of excellent grapes. Mr. Henry Knox exhibited a fine specimen of that beautiful exotic *C*áctus grandiflòra. A lot of fine Antwerp raspberries was contributed by Mr. Charles Miller. Mr. James Kirkpatrick, gardener to Mrs. Crooks, Leven, exhibited a lot of excellent vegetables, which inadvertently were omitted to be judged. Mr. Kirkpatrick exhibited a basketful of very fine early potatoes, which, for regularity in size and cleanness, were justly entitled to the eulogium they received from many of the visiters. (*Greenock Advertiser*, July 5.)

STIRLINGSHIRE.

Stirling Horticultural Society. — *May* 3. The following were among the prizes awarded: —

Flowers. Auriculas. Green-edged: 1. Barr's Flora, and Moore's Jubilee, Mr. Ninian Niven. Grey-edged: 1. Kenyon's Ringleader, and Taylor's Ploughboy, Mr. George Lightbody, Falkirk. White-edged: 1. Lee's Bright Venus, and Popplewell's Conqueror, Mr. Wm. Kay. Best Seedling (raised since Jan. 1829), Mr. John Christie, Causewayhead (no competition).

There were exhibited an assortment of fine named polyanthuses from Easter Plean; a beautiful seedling polyanthus from Kippenross; a basket of superior cucumbers and mushrooms from Airthrey Castle; extensive bouquets of flowering shrubs, herbaceous and green-house plants, from Keir and Viewfield gardens, and from Coney Park nurseries; and the greater part of such specimens being labelled, in compliance with a late recommendation of the directors, afforded considerable horticultural information to the numerous and fashionable assemblage. (*Stirling Advertiser*, May 6.)

May 31. The following were among the prizes awarded: —

Flowers. Tulips. Bybloemens (best dozen): Pucelle d'Orléans, Scipio Africanus, Louis the Sixteenth, Black Baguet, Dr. Mitchell, Stenhousemuir. Bizarrres: Carolus Magnus, Lord Rodney, Bell's King, Trafalgar, Dr. Mitchell, Stenhousemuir. Rose: Belle Amante, Gay Stella, Hebe, Triomphe Royal, 1. Dr. Mitchell, Stenhousemuir.

A basket of very fine anemones and wallflowers was sent from Mr. Ramsay, at Dollar botanic gardens, but was too late in arriving. The first prize turnips and the first prize potatoes were admirable. The former measured from 11 in. to 13 in. in circumference; and the latter from 6 in. to 9 in. in circumference. There were exhibited, choice collections of Chinese roses, double balsams, and other green-house plants, from Blair-Drummond. Named tulips, &c., from Easter Plean. Named ericas, &c., from Dollar botanic gardens. Herbaceous plants and cucumbers from Kippenross. Flowering shrubs and herbaceous plants from Coney Park nurseries. Double stocks, from Comely Bank. Named American shrubs, and herbaceous plants, from Keir: this latter parcel comprehended two very splendid double stocks in pots; the one a scarlet giant Cape about 3 ft. high, and the other a purple Brompton about 2 ft. high and upwards of 3 ft. in circumference: these, being most profusely covered with flowers, had a peculiarly rich and magnificent appearance. There were also shown a beautiful variety of double wallflower, raised from seed by Dr. Forrest; a fine double white China rose, by Mr. Christie, Causewayhead; and a neat portable rockwork, studded with growing alpine plants, with a pool in the centre, containing live fishes. The last-named curiosity was constructed by Mr. Kay, Shiphaugh, and was much and deservedly admired. (*Stirling Advertiser*, June 3.)

July 12. The prizes we omit, as before; but among the articles exhibited, we may mention: —

From Keir, georginas, roses, and stocks. From Cardross, *N*èrium spléndens, *B*ùtomus umbellàtus, double balsams, and Chinese roses. From Tulliallan Castle, Magnòl*ia* purpùrea, Sálvia spléndens, fine seedling pelargoniums and potentillas; also a fruited branch of a large green currant, lately introduced from Russia. From Viewfield Lodge, a very fine double Martagon lily, in a pot, profusely flowered, and standing nearly 5 ft. high. From Blair-Drummond, a choice collection of stove plants and tender annuals. From Mr. Christie, Causewayhead, some brilliant specimens of *G*ladìolus cardinàlis. From Boquhan, georginas and rare annuals. From Craigforth, Tigrídia pavònia. From Glenturn Moor, a basket of fine single and double Sweetwilliam. From Kippenross, superior kidneybeans. From Easter Plean, some beautiful specimens of Grove End strawberry, a new variety, much esteemed. From Comely Bank, six superior early York cabbage, the gross weight of which was 47 lbs. From Messrs. Drummond's nursery, very fine named pinks and roses, *L*upìnus polyphýllus, *G*èum coccíneum, &c. (*Stirling Advertiser*, July 15.)

IRELAND.

Horticultural Society of Ireland. — *April* 20. At the Spring Exhibition of Flowers, &c., the Society's premiums which were awarded for plants, flowers, and fruit, we omit, as no names of sorts are given. Among the culinary vegetables were: — White Broccoli, Mr. Hessian, gardener to R. Roe, Esq.; and Brussels Sprouts (accompanied by an account of the mode of cultivation), Mr. Nevin.

An extra-premium was awarded to Mr. Keefe, nurseryman, Long Lane, for a splendid basket of ornamental exotic plants. Among the plants which attracted notice, on account of their splendour or rarity, were, Kennèd*ia* coccinea, Pultenæ̀*a* polygalæfòlia, Grevíll*ea* rosmarinifòlia, Eutáxia púngens. Two splendid plants of Camèll*ia*, atrorùbens and *Sasánqua* ròsea, for which an extra-prize was awarded, sent by Mr. Grant, gardener to George Putland, Esq. Daviès*ia* latifòlia, and Boròn*ia* pinnàta, sent by Mr. Keefe, nurseryman. A very large specimen of *Ac*àcia verticillàta, and fine specimens of the following plants in flower, sent by Mr. Mackay, from the College botanic garden, but not for competition, were universally allowed to be the finest exotics in the room: — Azàlea índica álba, Sarracèn*ia* flàva, Lipària Priestlèy*a* villòsa, Gardèn*ia* flórida, Lantàna mutábilis, E'pacris pulchélla, Epiphýllum truncàtum, Grevíll*ea* rosmarinifòlia, Pultenæ̀*a* daphnöìdes, Amarýll*is* speciòsa, *E*rìca delécta, *E.* aristàta, *E.* transpàrens, *E.* Bonplandi*àna*, *E.* ovàta, *E.* princeps, Oncídium carthaginénse, Metrosidèros capitàta. *Pùnica Gra*nàtum, in full bearing, and several showy specimens of stove and green-house plants, which were not entered for competition, being deficient in the number required for each class, were sent by Michael Sweetman, Esq., of Merville. (*Dublin Evening Post*, April 30.)

COUNTY OF ANTRIM.

Belfast Horticultural Society. — The May Show of Flowers, Fruits, and Vegetables of this rising Society took place on the 18th. Prizes were awarded, but the names of the sorts are not given.

[If our Scotch and Irish friends complain of the shortness of the notices relating to them, we can only refer them to p. 626., and request them in future to favour us with the names of the sorts of fruit, flowers, and vegetables which have gained prizes.]

Art. VII. *Obituary.*

Died, at Dulwich, July 25. in his 68th year, *William Clark, Esq.*, of Croydon, an eminent florist in his time, and an honourable and upright man. He raised many tulips from seed, among others, Lawrance's La Joie (p. 601.). It was broken by Mr. Lawrance, and hence the cause of its bearing his name. The merit of selecting the best-formed flowers, saving their seeds, sowing them, and raising the plants, belongs to Mr. Clark. He was an amateur, and never received money for flowers; but, when he gave a seedling bulb away, he generally arranged to have one bulb of every flower that broke. — *N. Aug.* 1831.

Died, at Packington, Warwickshire, August 5. in the 92d year of his age, *Mr. Richard Jones*, who, during a period of more than thirty years, filled the situation of gardener to the late Earl of Aylesford, at Packington Hall. This excellent man was the eldest son of Mr. Thomas Jones, a maltster and brewer of Morvil in the county of Salop, and was born May 2. O.S. 1740. When about 12 years old, his father placed him under the care of a Mr. Farmer, gardener to Sir Richard Acton, Bart., at Aldenham, near Bridgenorth, to whom he served an apprenticeship of seven years. In this situation his good conduct happily acquired for him the favourable notice of that most eminent and highly gifted man, Launcelot Brown, Esq. (then principal gardener to King George II.), who, at the expiration of his apprenticeship, engaged him to work in the royal gardens, under his own immediate superintendence and tuition. With this gentleman (who may be justly styled the father of his profession, and who was, in fact, the founder of a new era in landscape-gardening), Mr. Jones continued about three years, his time being at first chiefly divided between the gardens of Kensington Palace and Hampton Court, and subsequently among those of Richmond, Kew, and Buckingham House. Mr. Brown afterwards procured for him the situation of gardener to Lord Holland, at Holland House, Kensington, where he saw much of the celebrated Charles James Fox, in whom (although he was then a mere child) Mr. Jones's penetration led him to discover the germs of that noble and independent spirit for which he was afterwards so much distinguished in public life. About the year 1766, he quitted the service of Lord Holland, and (at the recommendation of his friend, Mr. Brown) was engaged by Lord Sandys to superintend the gardens attached to Ombersley Court, Worcestershire. In this latter situation he had resided about three years, when Lady Torrington prevailed upon him to enter the service of her brother, the Earl of Cork and Boyle, at Marston House near Frome, in Somersetshire, whither, accordingly, he now removed. Here it was his happiness to form a matrimonial connection with Mary, the eldest daughter of Mr. Thomas Ball, a respectable farmer, residing at Postlebury House, near Frome, by whom he had fifteen children. She died on the 23d of May, 1829, after having shared with her husband, for more than half a century, the vicissitudes of an active and a happy life. In the discharge of the arduous duties of a wife and mother her conduct was most exemplary; and she enjoyed, with her husband, the peculiar gratification of witnessing the marriages of twelve of their children, and the births of fifty-five grandchildren and great-grandchildren. After retaining his situation under the Earl of Cork for about twelve years, during which time he acquired the esteem and confidence of his noble employer, he was engaged by the Marchioness of Bath, of Longleat House, Wiltshire, to undertake the management of the extensive gardens of her son-in-law, the late Earl of Aylesford, at Packington Hall, near Coventry, to which place he removed in the spring of the year 1781. In the quiet and retirement of this rural spot (the site of the ancient forest of Arden, some of whose oaks, contemporary with Henry VIII., are still to be seen in the park) Mr. Jones was destined to pass the remainder of his days; and he had already been actively engaged in the service of the Earl of Aylesford, upwards of thirty years, when, the sudden death of that nobleman dissolving the connection, he soon afterwards retired upon a handsome pension, which his lamented patron had previously settled upon him.

Mr. Jones was eminently formed for social life: by his engaging manners he had the happy facility of commanding, even at a first interview, the favourable opinion of all who saw him; and, when a more lengthened acquaintance ensued, he rarely failed to become the object of strong and lasting attachment. His hospitality was unbounded, and his highest delight consisted in seeing his table surrounded with happy faces, and in promoting (as none could more effectually do) " the feast of reason and the flow of soul." Although a most conscientious believer in the doctrines of the church of Rome, yet so far was he from being bigotedly attached to his own peculiar tenets, that he freely permitted all his children to attend the public services of the neighbouring parish church, there being no place of worship belonging to his own communion within less than six or seven miles of his residence. Nevertheless, he was himself for many years, a very frequent attendant at the Catholic chapels of Coventry, Solihull, and Birmingham; and when his increasing age and infirmities rendered these journeys inconvenient, he continued his devotions at home, appropriating to them daily, during the last few years of his life, a considerable portion of his time. His last visit to Birmingham was for the express purpose of attending public worship at the Catholic chapel, at Easter, 1830 (being then 90 years of age), on which occasion he spent a week with the writer of this notice, who will ever retain a most lively recollection of the pleasure it afforded him. Mr. Jones became, in early life, devotedly attached to the study of natural history in all its branches, and his collections were at one time very numerous, and attracted great admiration; his long residence in Somersetshire affording him frequent opportunities of examining the geological features of that beautiful and romantic country, whence a considerable proportion of his finest specimens were derived; and the writer has frequently heard him declare that in all his excursions he never once passed a stone-quarry without minutely inspecting it. His contributions to the collections of the most eminent naturalists of his time were extremely liberal, and obtained for him the friendly regards of Sir Joseph Banks (then president of the Royal Society), Sir Ashton Lever (the founder of the Leverian Museum, as it was afterwards called), the Lord Chancellor Thurlow, and many other distinguished persons; among the latter was the Marquess of Donegal, who was so smitten with Mr. Jones's collection, that he offered him a considerable sum of money for the purchase of it, but which Mr. Jones declined. Many years afterwards, however, he presented the major part of his specimens to a noble lady, to whose family he had been indebted for many acts of kindness; other portions were bestowed upon different members of his own family, and the remnant of the collection has since fallen into the hands of him who now records its dispersion. — *Thomas Clarke, jun. Birmingham, Sept.* 8. 1831.

We called on Mr. Jones early in May last, and found the venerable gentleman seemingly in good health, though rather deaf. We were surprised at the strength of his mind and at the liberality of his observations. In short, we found nothing in his intellect which indicated the infirmities of age. He mentioned a number of anecdotes respecting the celebrated landscape-gardener Brown, to whom he had been foreman, and who placed him as head gardener at Packington, and he made some remarkable observations respecting the Gardener's Magazine, which we shall give in the details of our tour. — *Cond.*

THE

GARDENER'S MAGAZINE,

DECEMBER, 1831.

PART I.

ORIGINAL CORRESPONDENCE.

Art. I. *General Results of a Gardening Tour, during July, August, and part of September, in the present Year, from Dumfries, by Kirkcudbright, Ayr, and Greenock, to Paisley.* By the Conductor.

(*Continued from* p. 557.)

We arrived at Dumfries on July 28., and in the neighbourhood of that town visited Castle Dykes, Hannayfield, Dalscairth, Goldielee, Terraughty, *Terreagles, Maybie, Kirkconnell, Cairnsalloch, Dalswinton, Lincluden Castle, Newton Lodge, and the cottage residences of —— Kerr, Esq., —— Symes, Esq., and others. We also visited the Nurseries of Mr. Kennedy, Mr. Irving, Mr. Hood, Mr. Bogie, Mr. Lermont, and Mr. M'Ken. We left Dumfries on August 8., and proceeded by Lochmaben to *Jardine Hall, whence we visited *Raehills. From Jardine Hall we went, by Cumroo Farm and *Kirkmichael Hall, to *Closeburn Hall. From this mansion we visited Closeburn Castle, Drumlanrig Castle, Baitford, and Kennedy's Nursery at Thornhill. On Aug. 12. we left Closeburn Hall, and, returning to Dumfries, saw Blackwood, Woodlands, and other places. We then visited the garden of St. Peter's, at the village of Dalbeattie and Munches. Next day we left the kind family at Munches for *Galston Castle and *St. Mary's Isle. From Kirkcudbright, near the latter place, we went to Gatehouse, in the neighbourhood of which we saw Enrick Farm, and *Cally House. Thence we proceeded to Newton Stewart, visiting Bargally, and glancing at Ardwell, Cairnsmuir, and a number of other places. From Newton Stewart we went, by Penningham House and Straiton village, to Kirkmichael; and next day visited *Blairquhan, the town of Maybole, Crossraguel Abbey, *Culzean Castle, and the town of Girvan. On August 19. we saw Killochan, *Clencaird, *Bargany, *Dalquharran, *Kilkerran, and the town of Ayr. From Ayr we went to see Dalblair House, Belle Isle, Roselle, Doonholme, *Cassilis, *Auchincruive, Belmont Cottage, and the cottages of Mr. Paton and Mr. Auld. We visited also the Nurseries of Messrs. Smith and Sons, at Ayr, and at Monkwood; Mr. M'Kenna's Nursery, and Mr. Imrie's Nursery, at Ayr; and Mr. Goldie's Botanic Garden at Colroy; the farms of Shields, Highfield, and Greenfields; the celebrated works at Catrine, and the agricultural improvements on Mr. Buchanan's estate at Woodside. In the neighbourhood of Kilmarnock, we saw *Loudon Castle, Lanfine, *Caprington Castle, *Williamfield, *Rosemount, *Fullarton Place, and a number of other places; the town garden of Mr. Brown, and the Nurseries of Messrs. Dyke and Gentle, of Mr. Foulds, and of Mr. Samson. Near Irvine, we saw *Eglinton Castle, and on the road thence to Greenock, *Kelburn House, and *Ardgowan. We also glanced at Skelmorlie, Southennan Lodge, Kelly, and Fairly Cottages. We arrived at Greenock on August 29., and saw there Shaw's water-works, and the various contrivances of Mr. Thom for filtering water, and conveying it to the town. Between Greenock and Paisley we saw Finlaystone and *Erskine, and glanced at Barr and Walkingshaw. At Paisley we saw Greenlaw, Reid's Nursery, the town gardens called the United States, Crossflat, Auchintoolie, Kilnside, Gibbs's filtering-apparatus and bleaching-works, Mr. Glen's farm at Hawhead Mains, Mr. Craig's Mill, the town garden of Mr. Torbet, and a variety of other gardens, works, and establishments, which will be noticed in the details of our tour. On September 3. we arrived at Crosslee Cottage, where we remained with our much-esteemed friend, Archibald Woodhouse, Esq., till September 5., and saw Craiglands and *Castle Semple. On the evening of that day, we received the distressing intelligence of the dangerous illness of a parent, and on the following morning we set off for London, where we arrived on September 9., having passed through Glasgow and Edinburgh, without waiting a moment to see either a friend or a garden. Happily we arrived in time to soothe the last days of our much-loved and much-respected mother, who died on October 14., and whose loss those sons only can feel and understand, who, like us, have lived with their mother nearly half a century under the same roof, and who have long before lost their father.

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* Mansion residences thus marked (*), for the reasons given in p. 385.

The Geology of this Part of the West of Scotland presents many interesting features. A sandstone, similar to the red sandstone of Warwickshire in appearance, but considered by some geologists an older formation, called the old red sandstone, constitutes the foundation of the town of Dumfries, and supplies abundance of excellent material for the new buildings of that town, which display it to advantage in handsome fronts of squared and frequently polished blocks, which in the better class of buildings, are very neatly jointed with glazier's putty. The same rock continues to the foot of the hills, which, within a few miles of Dumfries, commence with argillaceous schistus, trap, basalt, and granite, and continue, with freestone and secondary limestone intervening here and there, over all the tract which we have mentioned, to Paisley. Advancing up the shores of the Clyde, we saw from the road, at low water, a lower stratum of dark basaltic rock, which is intimately associated with the red sandstone above, appearing to pass by gradation into it. The intervening strata of sandstone seem as if partially fused by proximity to the basaltic rock beneath. The strata in a descending series are:— 1. Red sandstone, a fine conglomerate; 2. Grey siliceous fine-grained sandstone, with particles of green earth; 3. Striped red and grey sandstone, similar in composition to No. 2.; 4. More compact sandstone, with numerous particles of felspar, presenting the appearance of having been indurated by proximity to the basaltic rock; 5. A rock which seems intermediate between sandstone and trap; 6. A black basaltic rock, the lower part intersected by vertical fissures. We collected specimens of all the above from a bed, not more than a yard in thickness, situated on the shore at Largs. The first large mass of granite which we saw was the Criffel mountain, near Dalbeattie; and the first limestone was at Closeburn, where it is most scientifically worked by Mr. Stuart Menteath. (See Vol. II. p. 107. 402.) This rock again occurs at Straiton; and, from Girvan along the coast as far as Saltcoats, limestone and coal are in the greatest abundance, and are extensively worked, both for home consumption and for exportation. Both limestone and coal occur again in the neighbourhood of Paisley, where they are also worked to a great extent.

The Surface of this tract of country is every where of great natural beauty, and is, beyond all the landscape we have seen since leaving London, except that near the lakes of Cumberland and Westmoreland, adapted for country residences. In a general view it is mountainous and hilly; but, in passing through it, we meet with numerous streams or rivers with the most varied banks; and occasionally, where the larger rivers run into the sea, with fertile levels of alluvial or of sandy soil. Leaving Annan in the evening, and passing over the dull flat tract of country which intervenes between that town and Dumfries, we arrived there in the dark. Next morning we took a walk round the town, and were struck with astonishment and delight at the beautifully varied country to the north and west. Immediately round Dumfries the surface is undulating, and richly clothed with corn crops, bounded by neatly cut hedges, with good roads, numerous strips of plantations, and various country seats of the villa kind. Beyond this agricultural surface, the country gradually rises into hills and mountains. The lower parts of the hills display country seats, surrounded by pasture fields and gardens; while the upper parts are mostly clothed with wood, the summits of the mountains being bare. Taking it altogether, it is decidedly the finest combination of agricultural richness and picturesque beauty which we have seen on our present tour; indeed, we do not recollect any thing in Britain more in the Italian style of landscape. The wavy surface, the corn, the pastures, and the trees are often to be met with both in England and in Scotland; but we do not know where to find, south of the Tweed, those finely marked outlines of hills and mountains which, in the neighbourhood of Dumfries, generally terminate the landscape. We arrived at this town with the impression still remaining on our minds which we had received from the surrounding country twenty-six years ago, when the hills were unclothed with wood, and the low grounds in a great measure uncultivated and unenclosed, a great part of them being black peat bog. Our surprise and delight at the change may be more easily conceived than described. We can only repeat, that it recalled to our imagination the scenery of the north of Italy, with the wooded Apennines, backed by the pointed summits of the naked Alps. Taking the coast road to Kirkcudbright, we found the scenery to improve as we advanced, and, in our opinion, between Gatehouse and Newton Stewart, it far surpasses the finest parts of the coast scenery between Terracina and Naples. We say "far surpasses," because we leave out of consideration all those classical associations which give such a powerful charm to Italy, and speak merely of agricultural richness and picturesque beauty. As far as these go, there is little to be wished for in the west coast of Scotland, except a superior architecture in the towns, villages, cottages, and country seats. While passing through this tract, and indeed the whole of what we have yet seen of Scotland, we could not help lamenting the want of knowledge or of taste in those men of great wealth who build or plant in the flat, tame, rich levels of England, and who, in struggling to produce effect, lay out immense sums, a tithe of which, properly employed on situations of natural beauty (of which there are thousands to be found in the hilly districts of Scotland), would produce results which all the art of man could never effect in England. This opinion may perhaps be attributed to national prejudice on our part; yet we cannot help thinking that when a railroad, like that between Manchester and Liverpool, shall bisect the island from Dover to John o' Groat's house, Scotland will be the land of country residences, and the flat counties of England will be left to farmers and graziers. Whoever builds or plants in Scotland has generally the gratification of knowing that he is cultivating and appropriating to the use of man what would otherwise be of little value, from its not being adapted to agricultural purposes. For our own part, we should feel far more pleasure in creating a country seat, if only a cottage residence, out of bogs and barren rocks, than in the easy task of destroying rich meadows and corn lands, by covering them with palaces and plantations.

The Soil in the west of Scotland is not in general, in its native state, fertile; and in many places it is, or was, covered with heath or peat, or rendered unfit for tillage by a retentive subsoil; but it is every where capable of the greatest improvements, either by draining, or irrigation, or by sheltering it with plantations.

The Climate, on which the agriculture of a country depends much more than on the soil, is temperate, and moderately moist; and, consequently, seconds the efforts of man in the production of grass, forest trees, and root and herbage crops: for corn and fruits it is not so favourable.

The native Trees of this tract are the oak, the ash, and the others common to Scotland. The sycamore (*A'cer*), the ash, and the mountain ash have in some places acquired very great bulk, especially in the north of Carrick, the southern division of Ayrshire. The two former trees seem to have been the only ones employed as *dool trees* * in the days of heritable jurisdiction; and the largest specimens in the county, as at Blairquhan and Cassilis, are individuals known to have been used for the above purpose. The largest mountain ash trees are on the estate of Bargany; one by the road-side, in the village of New Dailly, has a trunk, free from branches, 20 ft. high, the circumference at the base being above 7 ft., and at the first branch above 5 ft. The head is not large in proportion, as the tree was blown down and much injured about twenty years ago.

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* For the sake of such of our readers as know little of the history of Scotland, we may state that, in former times, the heads of clans had a power of life and death over their vassals; and tried all actions, criminal as well as civil, that took place within their territories. Death, in the lowlands, was carried into execution by hanging the delinquent on a tree destined for the purpose, which generally grew close to the baronial residence, and was called the *dool tree*. In the highlands, where trees were less common, a deep pit or well was often used for the same purpose; the individual to be hanged going down a ladder into the well, and fixing the rope round his neck himself; the ladder being withdrawn, he was then pulled half way up by the executioner, and left suspended. These times appear to us horrible; but, considering the then state of civilisation, we question if more suffering, relatively to their capacity for enjoyment, was then endured by the people, than is now suffered by the comparatively refined natives of Great Britain, and especially in England, from the prejudices, ignorance, and tyranny of individuals who sometimes find their way into the local or unpaid magistracy. The abuse of the poor-laws, and consequent distress of the labouring classes, may be clearly traced to this source. But these and other evils are gradually passing away. Posterity will look on the hereditary judges of the dark ages, and the rural justices and hereditary legislators of the present time, as necessary steps in the progress of society from barbarism to that high and equal civilisation which will be ultimately produced by high, equal, and universal education. By many, this prospective view of society will be thought chimerical; but, by turning to the *Quarterly Journal of Education* (vol. ii. p. 251—259. 8vo, 1831.), it will be seen that it already, in a great measure, exists; and has done so for a century, in the state of New England, in North America.

The herbaceous Plants, in a district containing almost every variety of soil, and a surface so much varied, are necessarily of many species. The meadows of Dumfriesshire and in the stewartry of Kirkcudbright were covered with the blue flowers of *G*erànium praténse; and, in some glens in Renfrewshire, the snowdrop is indigenous. Mallows are common along the coast; and at Ardmillan, three miles below Girvan, the *Yúcca* gloriòsa, which had been cast on shore there at some former period, is growing apparently in a wild state. All these plants, and numerous others, which might easily be enumerated, afford evidence of great mildness of climate near the sea and the rivers; and this is confirmed by the number of exotic shrubs which are found to live through the winter against walls in gardens, with very little protection. At Kirkconnell, on the Nith; at St. Mary's Isle, on the Dee; at Cally, on the Fleet; at Barganny, on the Girvan; at Doonholme, on the Doon; at Auchincruive, on the Ayr; at Eglinton Castle, near the Irvine; and at a number of intervening places; the common myrtle may be seen as a wall tree in the kitchen-garden, flowering in summer, and only slightly protected by a mat during the most severe months of winter. At Culzean Castle, on the sea-shore near Maybole, and at Ardgowan on the Clyde, near Greenock, the myrtle thrives as a wall tree without any protection. At the former place, *A*'rbutus *A*ndráchne has attained a large size as a standard; and the common olive, the Japan quince, Camél*lia*, green tea, Edwárds*ia* microphýlla, *T*áxus elongàta, Bignòn*ia* Pandòr*æ*, *A*càcia verticillàta, and other New Holland shrubs, have stood several years as wall trees. At Ardgowan, the Camél*lia* has stood as a common shrub; and the green tea, Aloýs*ia* citriodòra, and Medicàgo arbòrea have stood as wall trees. At Finlaystone, near Port Glasgow, the fig ripens on the open garden wall every year; and in the new garden at Erskine, on the Clyde, the Hamburgh, Frankendale, and other grapes have been brought to such a state of perfection on the open flued wall, without any covering either in spring or autumn, that they are sold in Glasgow market at the same price as grapes raised under glass. We saw large bunches (Aug. 31.) colouring beautifully. We do not think it at all likely that the same shrubs would pass the winter equally well on the sea-coast of Lancashire; because that flat coast, notwithstanding its advantage over the west coast of Scotland in point of latitude, is exposed to the Atlantic, and is without natural shelter either from islands or headlands in the sea, or from hills or mountains on shore.

The natural Zoology of this Part of Scotland is but imperfectly known, and there appears reason to believe that various birds and insects will be found in it, either as occasional visitants, or as indigenous, which are not now considered natives. Sir William Jardine, of Jardine Hall, in Dumfriesshire, a profound and enthusiastic ornithologist, and conversant with every branch of natural history, has already added various species of birds to the Dumfriesshire list; and has found some plants in his neighbourhood not before suspected to belong to the Scottish flora. The new edition of the *Statistical Account of Scotland*, now preparing by the clergy of the different parishes will, it is hoped, throw much light on Natural History and Agriculture, as well as on statistics.

Man, as far as we have hitherto advanced in Scotland, certainly appears sufficiently different from his fellows in the central counties of England, and even in Lancashire, to be considered as a distinct sub-variety; using the word variety in its scientific sense, as indicative of peculiarity of habit induced by accidental circumstances. Speaking of the body, the habit of both sexes, among the lower classes of the Scotch, of passing the years of infancy bare-legged and bare-footed, seems to have communicated a degree of activity of character not found among the same class in any of the lowland counties of England; nor even, as it appears to us, in Derbyshire, or the hilly districts of Cumberland or Westmoreland. The imperfection of the Scotch dwellings, and the necessity which the Scotch people are under, from infancy, of having recourse to expedients, must have an effect in calling forth their inventive powers; but, while this is favourable to ingenuity and perseverance, it must be confessed to be unfavourable to the progress of cleanliness and habits of neatness, which are, unquestionably, not so prevalent among the poorest class in Scotland, as they are among the poorest class in England. These circumstances, the uncertainty of the climate, and their school-education, probably give to the Scotch that sagacity which is generally allowed to be one of the national characteristics. Their attachment to their parents, said to be another characteristic, is in part a remainder of the principle of clanship, and in part the result of the mutual dependence of parents and children upon each other, which necessarily takes place in an agricultural country, and one without poor-rates. Where commerce, manufactures, and high wages have been introduced, children, in consequence of being early forced to earn money, soon become independent of their parents, and filial affection is often found to give way. This tendency is not to be counteracted by recurring to the agricultural state, but by moral and intellectual education; by which, it may be said, the head is called in to assist the heart, and that which originated in feelings of self-preservation is continued through a sense of justice and duty.

General Improvement. — Having thus slightly noticed the natural circumstances of the western counties of the Lowlands of Scotland, we shall next take a general view of what has been done by man in the way of improving or adapting for his use that which nature has set before him. The adaptation of a country to the purposes of man must always depend on the nature of that country, and on the degree of civilisation, and the amount of skill and capital, possessed by its inhabitants. The progress which the tract in question has made, since we passed through it in 1805, is no less gratifying than it is astonishing. Good lines of road are now formed where the roads were formerly hilly, circuitous, and always in bad order. Extensive tracts of country which in 1805 were open waste; for instance, about Lochmaben in Dumfriesshire, Castle Douglas in Kirkcudbright, and Galston in Ayrshire, are now enclosed, drained, sheltered by plantations, studded with farm-houses and cottages, and subjected to a regular rotation of crops. Many thousands of acres of rocky surface have been planted, and of the steep sides of hills where aration could not be practised; and, we think, we may safely state, that, for every ten acres of plantation which existed in 1805, there are a thousand in 1831. Almost all the farm-houses and farm-yards of the country have been renewed since the former period, and these now present a most regular and comfortable appearance. A great many of the labourers' cottages have also been rebuilt in a more substantial style, though not, as we shall hereafter show, with that attention to the comfort, decency, and cleanliness of the inhabitants which has taken place in farm-houses.

Next to the improvement which has been made in the agriculture of the country, is that which has been effected in the country seats of the landed proprietors. Almost every gentleman's house has been enlarged or rebuilt; new kitchen-gardens have been formed and the pleasure-grounds altered; the number of hot-houses is increased at least a hundred-fold, and lodges, winding approaches, and scattered timber trees are now substituted for commonplace roads, gates, and grass fields; the latter either naked, or displaying only a few round clumps. All the towns have been more or less increased in size; the new buildings are larger, and of an improved architecture, and the streets are wider. The town which has improved the least appears to be Kirkcudbright. In the suburbs of the enlarged towns, villas and ornamental cottages have been built, though, as yet, only to a moderate extent. The neighbourhoods of Greenock, Port Glasgow, and Paisley contain most of these residences, because these towns have longest enjoyed the benefits of improved manufactures and commerce. The introduction of steam-boats for the conveyance of live stock to distant markets has increased the value of land on the west coast generally, from the Orkneys to Liverpool, and especially in Dumfriesshire, Kircudbrightshire, Wigtonshire, and Ayrshire. The formation of harbours and piers at Troon by the Duke of Portland, and at Ardrossan and Saltcoats by the Earl of Eglinton and others, has opened a new market for the coal and lime raised in the interior, and brought down to these ports by railroads. The great increase of the commerce and shipping of Greenock and Port Glasgow is well known. The introduction, by Mr. Thom, of a canal of water along the summit of a ridge of hills, which in its descent to the Clyde will turn thirty overshot wheels, each 50 ft. in diameter, is one of the grandest and most original improvements which have ever been made for any town. By embanking the Clyde so as to confine its waters to a narrower channel in some places, and by the employment of machinery in others, that channel has been deepened so as to admit vessels of 200 tons to reach Glasgow; whereas, before, nothing but a common barge could go farther up than Port Glasgow. A canal, which had been projected from Glasgow to Ardrossan, by Paisley and Johnstone, and executed as far as the latter village, has, by the deepening of the Clyde, been in a great degree superseded, and will probably not be completed; but on this canal vessels with passengers are carried along at the rate of nine miles an hour by horses, and a new plan is now under experiment for applying steam so as to effect the same object, and even to increase the speed. The manufactories of Paisley and Kilmarnock have greatly increased, and villas are consequently building round both towns. The manufacturing establishment at Catrine, in Ayrshire, is one of the most perfect of the kind which we have ever seen, not only with reference to its machinery and buildings, but to the comforts, cleanliness, and morals of the workmen. Almost all of these live in houses and cultivate gardens which are their own property; and they not only support a respectable extra-parochial school, but one or more places of worship. In the parish schools throughout the west of Scotland the routine of education has been slightly improved by the introduction of miscellaneous reading, but the great defects of these establishments remain the same.

A Horticultural Society has been established in Dumfriesshire, and another in Ayrshire; both of which have done much good. The latter Society has the great merit of having connected with it a horticultural and agricultural library, the books of which are circulated freely among the gardeners and farmers of the county of Ayr who are members. In all the other towns there are general public libraries and reading-rooms; in Paisley there are no fewer than seven of the latter. At least half a dozen newspapers have been commenced in this district since we last passed through it, and are now continued. These papers, and the growing taste for reading, together with the changes that have taken place in the pecuniary circumstances of most men since the peace, have greatly increased their moral and political knowledge, and their desire for the enjoyment of free and liberal institutions. When we left Scotland, the poorer classes of society could scarcely be said to have an opinion on political subjects; or, if they had, they did not dare to avow it. Now, high political intelligence is general among all ranks in the west of Scotland; and the sound knowledge of the science of government, which has been displayed by the journeymen weavers of Paisley and Glasgow, has not been surpassed by men of any rank in any country. (See *Results of Machinery*, 3d edit. p. 6.)

By no other means, so well as by newspapers, could the introduction and dissemination of the fundamental principles of morals and politics be effected among the grown-up part of society: for, by recurring to these principles incidentally, in discussing the passing topics of the day, and by their being developed one at a time, they take root in minds that are not prepared by previous knowledge either to peruse or to understand a condensed or systematic form of conveying the principles of any science. The same observation will apply to the diffusion of every kind of knowledge. Cooperative and temperance societies are not to be lost sight of, if it were for no other reason than their showing evidence of the active state of the public mind in all that regards the progress of society. There cannot be a doubt that, both in America and in Scotland, very great evils have resulted from the taste, so long prevalent, for ardent spirits. The indulgence in fermented liquors may render men sots, but the excessive use of ardent spirits turns them into infuriated madmen.

The Progress made by Gardeners in professional and general Knowledge, in this part of the country, since we last passed through it, requires particular notice; but we confess that we have felt so much flattered by the manner in which both gardeners and their employers have every where received us, that we are afraid to trust ourselves with the subject. The numerous nurseries which have sprung up show the patronage which planting has received; and the hot-houses, of some kind or other, which are now to be found in every walled garden, attest the demand which has existed for skill in forcing. It is obvious that, to supply the demand thus created, gardeners must of necessity have become more intelligent. Hence the fact of their having made progress does not rest on our opinion, but on the evidence derived from the actual state of the country. The gardeners in Scotland are, perhaps, less botanical and scientific than those in England; but they seem to have a more general knowledge of all the practical departments of gardening, and of agriculture and rural affairs generally. The cause is easily found in the circumstance of most of them uniting the duties of forester to those of gardener, and many of them adding those of farmer or land-steward. The same men, if in situations in England, would probably be limited to the practice of horticulture or of floriculture, and might carry these branches to a higher pitch than they ever could do in Scotland. It cannot have been otherwise than highly gratifying to us, to be every where informed, both by the gardeners and their employers, that the Gardener's Magazine (read by every gardener in the west of Scotland, and by many farmers, chiefly from the Dumfries and Ayr horticultural libraries, or from copies purchased and lent out by the local nurserymen) has contributed materially to spread a knowledge of horticulture, and to raise the character of gardeners; and we consider it as a proof of the sincerity of this avowal, that the gardeners and amateurs of gardening in Ayrshire no sooner heard of our arrival at Dumfries, than they sent to invite us to a public dinner at Ayr with which they honoured us; and this dinner had no sooner taken place than we received a similar honour from the gardeners and amateurs at Kilmarnock.*

Of the Gardens and Gardeners generally, which we have seen during the whole of our tour from London to Paisley, we should say, that the gardens have received a considerable accession of new fruits, plants, and other objects; that the gardeners have evinced an increased knowledge of culture, and even of the science of plants, soils, and climates, but that they have, nevertheless, made very little progress in gardening as an art of design and taste. Clearly and decidedly the want of taste in planting and laying out grounds, and in keeping them in order afterwards, is the radical defect both of gardeners and their employers. It is deplorable to notice the numerous evidences of this which occur in the gardens, parks, or pleasure-grounds, of almost every country residence which we have enumerated in this and our two preceding articles. Of course there are exceptions, and we have noticed some of them; but we repeat that want of taste is generally the besetting sin. Quantity will naturally be the great object aimed at by those whose minds have not been refined by that degree of intellectual culture which can alone enable them to find enjoyment in excellence, and to discriminate between what is appropriate and elegant, and what is merely commonplace. This is the case with many proprietors; and if they are thus deficient in the qualities necessary to appreciate excellence, how is it to be supposed that their gardeners can succeed in its production? Where there is little or no demand there will be but little supply. The gardeners, in Scotland at least, are overwhelmed by the extent of the grounds committed to their charge, and the paucity of hands allowed to keep them in order. Hence the general coarseness and want of keeping of what is under their care. We can hardly say that we have seen one highly kept place in Scotland, though we have seen some residences containing miles of walks, and acres of coarse lawn and commonplace shrubbery. We must not, however, altogether exculpate the gardeners; for something of the unsatisfactory state in which most places are found is owing to the gardeners entertaining false notions of the manner of keeping them in order. We have, in our two preceding articles, shown that the common mode in which gravel walks and their edgings are kept, in even what are considered the best places in England, as well as in the most neglected in Scotland, is much more expensive than the mode which good taste would dictate. The means, as we have observed in the articles alluded to, are too generally mistaken for the end. If it is the duty and interest of masters, therefore, to improve their taste, in order to enable them to discriminate between what is good and what is bad in the taste of their gardeners, it is no less the interest and duty of gardeners to cultivate their taste, not only to enable them to fulfil their duties in a superior manner, but in order that they may be competent to excite in their employers that taste for the higher beauties of gardening, in which they are at present generally deficient. We have already stated when speaking on the same subject, in the Introduction to this Magazine (Vol. I. p. 9.), our conviction that if a class of gardeners of superior taste were to come forward, they would create a demand for themselves, on the principle that demand is influenced both by the supply and the quality of the article. Gardeners may ask, however, why they should take the pains to qualify themselves so highly, unless the result would either add to their remuneration, or diminish their labours? To this we answer, that it will ultimately do both. We have shown (p. 546.) that if walks, their verges, and the dug borders of clumps and shrubberies were kept in what we consider good taste, the labour of the gardener on them would be immediately lessened; and the same results would follow other improvements. With regard to remuneration, as the possession of superior knowledge, taste, and skill on the part of the gardener, must require him to bestow increased pains and longer time on the study of his profession, it is evident that he will become entitled to more for his labour, than those who have not taken so much pains, or employed so much time, and consequently have not acquired so much skill. This conclusion is founded on the acknowledged principle, that both the value and the price of an article are principally regulated by the labour required to produce it.

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* See *Ayr Advertiser*, August 25. 1831, and *Kilmarnock Chronicle*, August 30. 1831.

Our present limits prevent us from concluding the general results of this division of our tour; but we shall resume the subject in our next Number.

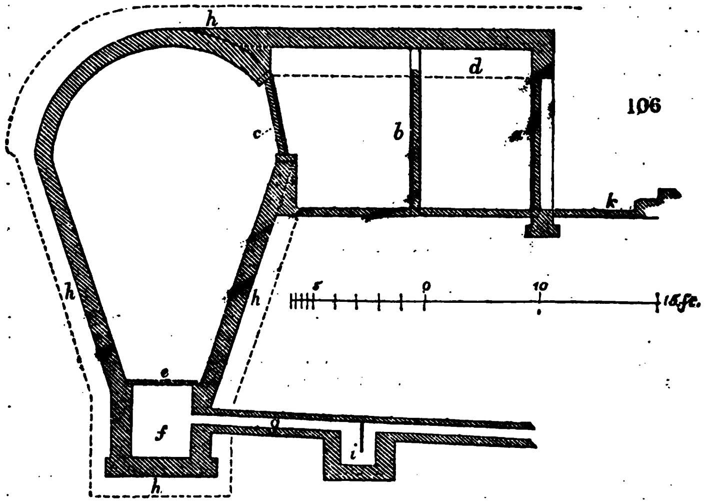
(*To be continued.*)

PART II.

MISCELLANEOUS INTELLIGENCE.

Art. I. *General Notices.*

Construction of an Ice-House. — Sir, I have lately had an ice-house erected, and, as I think a plan of its construction may be useful to others wishing to build one, I send you a sketch of the section. (*fig.* 106.)



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a, Entrance, about 4 ft. wide inside. *b*, Lobby. *c*, Cast-iron door, frame, and plate. *d*, Springing line for the covering arch. *e*, Cast-iron bottom, with holes. *f*, Cistern. *g*, Drain, 6 in. in diameter. *h h h h*, Puddle of clay well rammed in. *i*, Air trap. *k*, Steps down to the entrance.

A drain with a proper trap is better than trusting to the absorption of the water by the adjoining soil, as the latter commonly admits air. The cistern and traps should be well cemented inside, and the puddle round all the external walls should be well rammed in. Cast iron is ultimately cheaper than oak; as, when the latter decays, which it does very quickly, it is very difficult to get it renewed. The walls are drawn 9 in. thick, but I think 14 in. better. Estimating the walls at 14 in., bricks at 30*s*. a thousand, and the iron at 18*s*. per cwt., the total cost of such an ice-house would be about 75*l*. Yours, &c. — *J. S.* *January* 24. 1831.

Front Elevation of a Conservatory. — Sir, As you solicit designs as well as other communications from your various readers, you will, perhaps, not dislike a few elevations from those among them who are amateur architects.

I therefore beg leave to send you the enclosed sketch (*fig.* 107.), the whole glazing of which is intended to be of metal, with the walls of stucco or stone. I am, Sir, yours, &c. — *Wm. Mason, jun. Neston Hall, Swaffham, Norfolk, Aug., 1829.*

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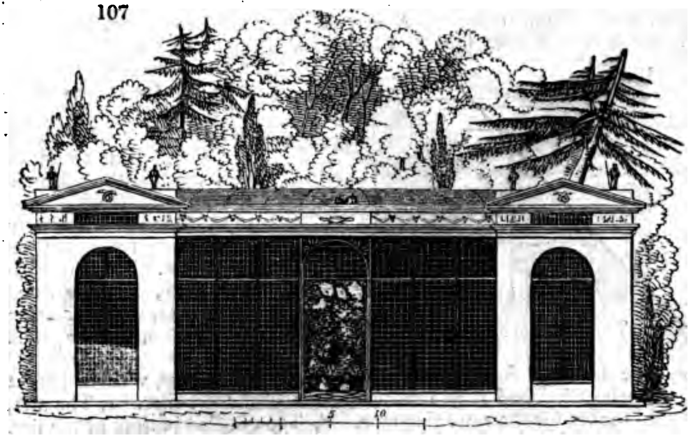

A Seed Cloth for drying Lettuce and other light Seeds. (*fig.* 108.) — The cloth may be of any size, but one 3 ft. or 4 ft. wide and 10 ft. or 12 ft. long will be found most convenient where there is a great number of different seeds to be dried. Sew the edges of the cloth to a cord on all the four sides, and in each angle introduce a loop or a ring (*a*). For every cloth have four pins (*b*), pointed at one end that they may enter easily into the ground, with a cross piece about a foot from the upper end to prevent them from going in too far, and from leaning too much to one side by the tension of the cloth, and with a hook near the top on which to hang the ring or loop. — *E. R. Brentford, Jan.* 1830.

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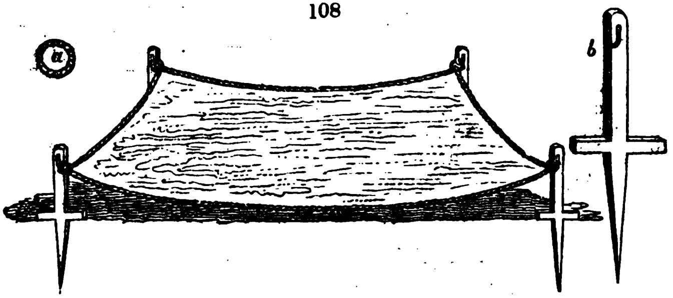

Applying the Waste Heat of Domestic Fires to the Purposes of Floriculture and Horticulture. — Sir, As so much has been said about heating with water, perhaps you will excuse me thus troubling you with the description of an advantage we have made of the workmen's sitting-room fire: for on the same principle, every sitting-room and kitchen fire in cottages or country residences may be made to heat a green-house, conservatory, peach-house, or grapery, or even the spacious balconies on the palaces in the parish of St. Peter's, Pimlico, which, if they had sashes to shift off and on, might be heated with the sitting-room fire, and thus made eligible places for the cultivation and preservation of plants. In farm-houses the principle will apply to great advantage, as both the parlour and kitchen fires may be put in use in heating a house of from 20 to 40 ft. long, 8 or 10 ft. broad, and from 10 to 15 ft. high, according to the quantity of firing usually consumed. We applied at the foundery that makes the various cast-iron vessels for the Apothecaries' Hall (Messrs. Anger, Ward, and Handyside, in Upper Ground Street, Surrey foot of Blackfriars' Bridge) to make us a boiler, with a place for fire in one side of it (as in the annexed sketch, *fig.* 109.), cast in one piece, with arms for the going and returning pipes, and with sockets in the arms to receive these pipes. These go to a cistern 28 ft. from the middle of the boiler. This cistern is 1 ft. wide, 1 ft. deep, and 15 in. long, with a wooden cover. The pipes are 3½ in., and the whole expense, when fitted up and fixed, was 12*l.* 15*s.*

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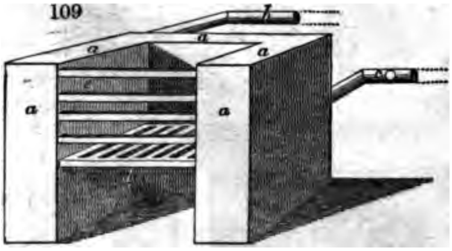


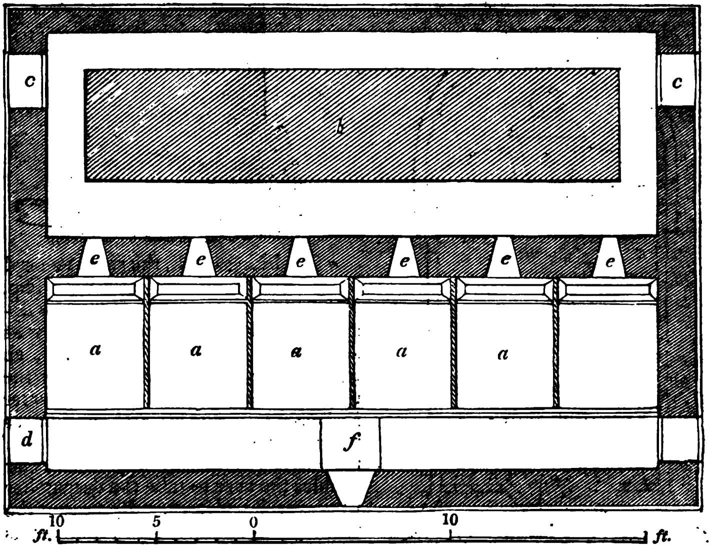
a, The boiler, 1 ft. deep, and 5 in. wide. *b*, The arm, with its socket for the going pipe, and it is 1 in. from the top of the boiler. *c*, The arm, with its socket for the returning pipe. *d*, The grate at bottom of the fire, resting on a ledge of 1 in., that was cast with the boiler. *e*, The round bars in front of the fire, which fall inside a ledge of the grate and a niche in the covering of the boiler, which fits exceedingly well, and in all respects looks like a common fireplace in the room, without any appearance of water. The boiler may be of any figure, to suit the fire-place. I am, Sir, yours, &c. — *William Anderson. Botanic Garden, Chelsea, Sept.* 9. 1831. [See p. 691.]

Heating Hot-houses by the Breath of Cattle. — Mr. M'Diarmid, the very intelligent editor of the *Dumfries and Galloway Courier*, has pointed out to us the following interesting passage, in his paper for Feb. 26. 1822. He also introduced us to Mr. Armstrong, who has furnished us with the plan which we subjoin to Mr. M'Diarmid's paragraph: —

" We lately had the pleasure of conversing with Mr. Robert Armstrong, a native of this country, who, after travelling over a great part of the continent of Asia, resided ten years in Persia, and, in returning to Britain, visited Astrachan, Moscow, St. Petersburgh, and various other places of note in the Russian dominions. In the neighbourhood of the latter city, our informant was surprised to find forcing-houses heated on an entirely new plan; a plan which, although new even in Russia, promised to become quite general. The peculiarity of this plan consists simply in substituting the breath of cattle for the old method of heating by fuel or steam; and its superiority was evident from the fact, that, in a climate where they have often 24° of frost, vegetables were raised far superior to any thing produced in this country. So far as we understand the plan, the byre containing the cattle is built in the form of a double house, with a partition wall, through which are a number of square holes, opposite the different cribs, leading to the green-house, and which open and shut at pleasure; as the holes are placed a few inches above the cribs, when the animals lift their heads for the purpose of breathing, the warm air immediately finds its way under the glass frames on the opposite side. The byre is, of course, kept very close, and for this purpose is provided with double doors, which are also listed; in this way the temperature was raised so high, even with a very limited number of cattle, that the apertures sometimes required to be closed, and the superabundant heat carried off by means of a ventilator. *A priori*, we might suppose that this closeness of the byres, although beneficial to vegetables, would prove injurious to animal life; but our informant assures us that the cattle actually throve better, and fattened more quickly, under this mode of treatment, than when their sheds were kept more open. In this country, a lower temperature would of course suffice for every ordinary purpose; and as to the necessity of removing the cattle occasionally, we understand this matter can be managed as easily as the regulation of the flues under the present system. Cattle, while they inhale oxygen, respire carbonic acid gas; a species of nourishment which, when not given to the extent of an over-dose, will undoubtedly quicken and promote vegetation, independently of the saving in fuel and men's time. The breath of the cattle serves for both heat and moisture, and completely supersedes the necessity of watering; in short, our informant, who is himself a very ingenious man, and who saw the thing reduced to practice, is perfectly satisfied of the superiority of the plan, and asserts that it is in the power of every farmer to possess a green-house equal to the most of those attached to the gardens of country gentlemen." (*Dumfries and Galloway Courier*, Feb. 26. 1822.)

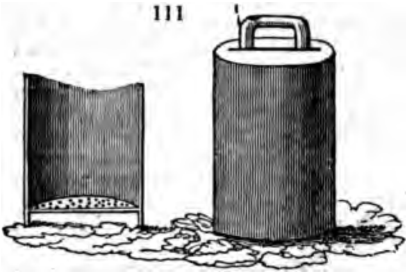
The plan (*fig.* 110.) kindly given us by Mr. Armstrong shows the cowstalls, *a a a*; the pit under a glass roof for vegetables, *b*; double doors to this pit, *c c*; double doors to the cowhouse, *d d*; openings having shutters on a level with the heads of the cows, through which their breath is thrown directly into the atmosphere of the plants, *e e*; and trap under the back passage, to a funnel for carrying away the dung, *f*. Of course, were a plan on this principle to be adopted in this country, it might be made more perfect in the details. We should like to see it tried by some of the great cowkeepers about London, for forcing succory and tart rhubarb, and more especially for early potatoes. In our *Treatise on Hot-houses*, published in 1804 (p. 152.), we suggested the idea of forming green-houses and vineries over stables, cowhouses, or even over cottages. — *Cond.*

110

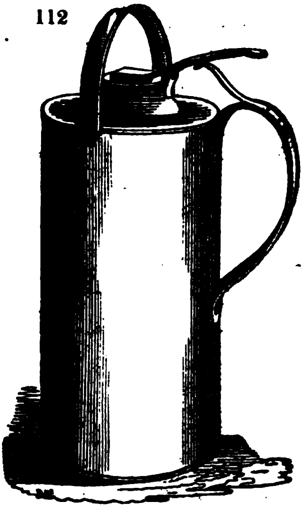


Saul's Watering-Despatcher. — Sir, I send you a drawing and description of what I denominate my watering-despatcher. In Vol. V. p. 656, you have figured and described a utensil called the soude (*fig.* 111.), and in Vol. VII. p. 219. another very similar utensil (*fig.* 112.) called the aquarian, or waterer; an attentive consideration of both which will show that the filling of either with water is a matter, if not of difficulty, at least of loss, of time, as the water has to enter by the very holes through which it is subsequently distributed. In my watering-despatcher (*fig.* 113.) I have obviated both the inconveniences; and on this account deem it decidedly superior to the soude, and the aquarian.

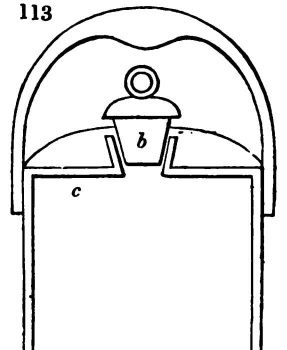
111



112



113

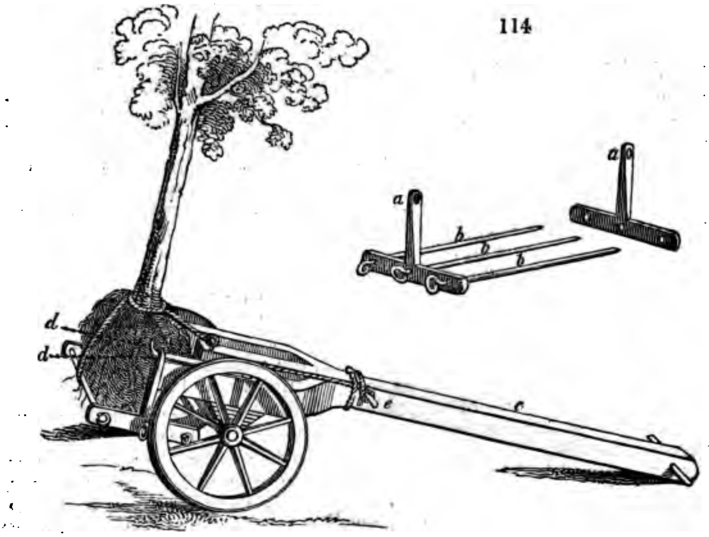


a is a lifting clack, the same as used in the bucket of the common pump, which admits the water into the despatcher, and will close securely as soon as the despatcher is filled. *b*, an upper valve, which is raised up by the upward pressure of the air as the water rushes in below at *a*; and as soon as the water has risen to the height of the cover (*c*) the valve (*b*) falls, and enables the user to take the despatcher wherever he pleases. By raising the valve (*b*) with the finger, the air is admitted to act on the water, and any quantity required may be discharged through the small holes (*d*) at the bottom. These holes are the same as in the rose of the common watering-pot. The clack will not allow a drop of water to escape from beneath it. Yours, &c. — *M. Saul. Sulyard Street, Lancaster.*

It will be here in place to remark that the Conductor, in his notice of the soude (Vol. V. p. 656.), proposed to improve shower-baths, by applying to them the pneumatical principle employed in the soude. This excellent idea, expressed in 1829, it has subsequently appeared, had also previously occurred to two others: first, to Mr. Murray, who (see Vol. VII. p. 219.) as early as 1819 had applied this principle to the improvement of shower-baths for adults, which shower-bath, thus improved by him, " he gave to the public unfettered by a patent, and it has been found infinitely superior to all the shower-baths [previously] in common use:" secondly, to a Wrexham mechanic, who, previously to April, 1828, had invented, on the very same principle, a *nursery* shower-bath (intended for children), as figured and described in our Vol. VI. p. 216, 217. Our gardening readers will not fail to perceive that Mr. Saul's amendment to the soude and aquarian is very similar in its nature to that supplied by Read to the garden syringe, and, if this kind of watering engine be adoptable, we think, quite as important. — *J. D.*

Saul's Machine for transplanting large Trees or Shrubs. — Sir, My machine (*fig.* 114.) for the above purpose differs from all you have hitherto noticed. To remove a tree, I first dig a sufficient trench round it, and then place on one side of its ball one of the irons (*a a*), which resemble in figure an inverted cross, or say the letter T turned bottom upwards. Each of these irons has three holes in its lower side, and one hole in the top or end of the upright part: this single hole is, in its direction, crosswise to the direction of the three holes below. Through these three holes I force three iron rods (*b b b*), and cause them to pass under the roots of the tree, and until the points of the rods appear in the trench on the opposite side of the ball. To their points I then apply and fasten on the other side-iron (*a*). I then lay a plank across the trench dug round the tree, and run the wheels of the machine to and upon the plank, and then raise the draught-beam, or lever (*c*), until the hooks (*d d*) catch into the holes in the top of *a a*. When this is done, as the draught-beam, or lever (*c*), is drawn down, the tree with its ball is raised out of the pit, and, when secured by a rope, may be conveyed, with the greatest ease, to the place of replanting. The rope is fastened to the end of the lever over the axletree, passed over the ball of the tree, under the machine, secured to the cross-piece (*e*), and thence, if necessary, extended up to the stem of the tree: great steadiness is thus produced. When the tree is brought to the hole prepared for it, the rope is removed, and the draught-beam, or lever, is raised until the iron frame (formed by *a a*, *b b b*) rests on the bottom of the hole; the machine is then disengaged from the irons (*a a*), and driven back, and the iron rods (*b b b*) with the irons (*a a*) are withdrawn. The filling in of the soil now completes the transplantation. Yours, &c. — *Matthias Saul. Sulyard Street, Lancaster, January* 25. 1831.

114



The Royal Dwarf Kidney or French Bean, a new and excellent Variety. — Sir, Out of a very great variety of kidneybeans cultivated in this island, I send you a packet of one sort, which, for its various excellences, is deserving of general attention. The beans are roundish. (*fig.* 115.) It very appropriately bears the appellation of royal dwarf. Whence it originated, or how or when introduced, I know not. It is only within the last four or five years that it has been offered for sale by seed dealers; and the very great eagerness with which it has hitherto been purchased is an incontestable proof of its superiority. The royal dwarf bean requires to be planted 9 in. or even 1 ft. apart in the drills, which should be 2 or 2½ ft. distant from each other. Planted thus, it grows and extends itself most luxuriantly; producing handsome red-streaked pods 8 or 9 in. in length, and to the amount of 20, 30, and even more, on each plant. Among the islanders, the criterion of excellence of this vegetable is, that it possesses none of that tough interior skin, or, as it is here termed, *parchemin* or parchment, which distinguishes the English sorts if not picked quite young. This quality the royal dwarf eminently possesses, and is in consequence edible when the reproductive germ has attained to a considerable size within the pod, which is even palatable when on the point of ripening. Hitherto we have found it somewhat shy in perfecting its seed; which leads me to imagine that it is a native of a warm climate, and the casual introduction of some mariner. It is true, the weather our summers have afforded us of late years has been so fluctuating as to be very prejudicial to the regular process of vegetation. The royal dwarf kidneybean is, however, to a certainty, more tardy in attaining to perfection than any other of its tribe. It is possible that this sort may be known to some of your readers, although I am pretty well convinced that its dissemination has not been very extensive. I recollect sending it, among other specimens, three years since to Mr. James Teeton, the venerable and worthy superintendent of the seed department at Messrs. Cormack and Sinclair's, New Cross; but as he has since abdicated, or at least no longer holds that situation, I know not what may have been its fate. I am, Sir, yours, &c. — *John Williams. Jersey, Nov.* 5. 1830.

115

The Broad-leaved Norman Cress. — Sir, Since my communication to you on the Norman cress (p. 242.), I have seen Mr. Malcolm and other nurserymen, to whom I have shown the broad-leaved Norman cress of 1783. They all say it is a variety they had not seen before (and wish for seed of it): from which it appears there are two kinds; one unknown in the trade, and the other not generally known. I now send you some plants as specimens, and a parcel of seed, which you can distribute, and thereby bring both kinds into general culture, by adding your own observation on their merits. I am, Sir, yours, &c. — *Joseph Thompson. Welbeck, Oct.* 31. 1831.

The plants received have very broad leaves, almost entire on the edges; general length, 6 in. or 8 in.; and breadth at the upper extremity, above an inch. The seed we have sent to Mr. Charlwood's, for distribution to such gardeners as may call for it, leaving their names and address. — *Cond.*

Art. II. *Foreign Notices.*

FRANCE.

Sir, After a residence of six months, I left Tours for Bagnoles Wells on the 13th of May, by which time the heat of the weather had become troublesome, though frequently, as in England, accompanied by chilling easterly winds. The road for Bagnoles is up the *tranchée*, formed on an artificial inclined plane, in the hollow of a regular excavation made from the top to the bottom of the hill, which is also the inlet to Tours from Paris, by way of Versailles, Rambouillet, Chartres, Vendôme, &c. This deep cutting or *tranchée* has exposed to view the stratification of this *côte* of the Loire in a manner highly gratifying to the geologist. The beds or different rocks of which it is mostly composed are all more or less decidedly calcareous. Several of them contain rare and curious, as well as many of the more common, fossil shells *, which abound in Touraine far beyond any thing of the sort I have ever met with elsewhere. Without referring to the right bank of the Loire from above Amboise to below Bourgueil, the left bank of the Cher from near Montrichard to its junction with the Loire at Brehemont, the banks of the Indre and Vienne every where, the country from Chanchevrier in the northern part of the province to St. Maure on the confines of Poitou, but above all that most extraordinary mass of many square miles of fossil shells, called by the French *les Falunières*, perhaps hardly to be paralleled; the *tranchée* in the fauxbourg St. Symphorien at Tours offers, notwithstanding its bare and rugged appearance, a rare, lasting, and delightful subject for study to the lover of natural history. From the telegraph stationed at the top of La Tranchée, where the traveller leaves the Paris road, to Château du Loire, which is in the department of La Sarthe, a few miles beyond the boundary of Touraine (department of the Indre and Loire), the surface of the country is pleasingly varied with hill and vale, flat lands intervening occasionally for a few miles together.

The vine is the prominent and favourite object of culture throughout; but at Château du Loire, where they boast of making a superior wine, the vineyard country ceases. The vine is not cultivated to advantage farther north, though they make indifferent wines at Le Mans, and even in the neighbourhood of Alençon. The soil also becomes more sandy, and the subsoil less calcareous; though near Le Mans to the north, there is excellent marl, and fossil shells are sparingly embedded in rocks belonging to the "calcaire jurassique" of M. de Humboldt. About Alençon the primitive measures make as it were an irruption into the more recent formations, and quarries of granite are worked to a considerable extent between that city and Prez en Pail.

Between Ecommoy and Le Mans the road passes through the forest of Bersay for several miles; a national forest, which contains much fine oak, with underwood of the common and mountain ash, and other sorts usually met with in the large woods of the south and west of England. Very large plantations of the pinaster (*P*ìnus marítima [see p. 699.]) of about 30 years' growth are intermixed in vast masses with the native productions of the forest. They have been raised from seed sown on the spot, as is common in France both in public and private forests, and are of good heights, but slender in bulk for want of timely thinning. Every where, without regard to soil or climate, the government and individuals continue to plant this worthless tree; content to raise whole forests of them for firewood, instead of cultivating the Norway spruce, the larch, or even the Scotch pine, as local circumstances might indicate, the timber of which is applicable to much more valuable purposes. Bands of Chouans from La Vendée or the uncivilised part of Britany were said to infest this large forest; but we met with no interruption in travelling through it, nor with any well-attested proof of the fact, though the constituted authorities at Le Mans, we found, expected the production of our passports, a requisition seldom made on travellers in the interior of France. It is probable that some of the banditti, who had been committing depredations on persons and property in the names of Charles X. and Henry V. in parts of La Vendée, had fled for temporary refuge from the strong arm of justice to the depths of the forest of Bersay, and, as we afterwards heard, to the woody recesses of the Boccage, a well-timbered and beautiful tract of country situated in the department of the Orne, which we subsequently crossed.

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* Amongst the latter are found the Terebrátulæ of different sorts in high preservation; and of the former I had the good fortune to meet with a delicate fossil, which M. Du Jardin, the professor of chemistry, says is not yet named, and that he only had before found one of the same kind.

Unlike the country about Tours, which contains a great number of *châteaux* and country seats, in general with little land attached to them, and few remaining marks of the feudal tyrannies which the owners of the former exercised only half a century ago, the dwellings of the rich are scattered about the departments of Sarthe and Orne but scantily. Neat houses of small landed proprietors, however, abound, and in the neighbourhood of some of the towns (Château du Loire, for instance) similar habitations for master manufacturers and workmen, and comfortable cottages for labourers. On the sides of the road, nearly all the way to Alençon, as in apparently much more populous parts of England, comfortable dwellings of one or the other of this description of houses were springing up every where, many in the act of being built. None of these were without their gardens, and some of them had orchards of apple and pear trees. A vine might be frequently seen trained against the front or end of the house, though these are here cultivated for their fruit, rather than for the liquor expressed from it; the general beverage of the country being cider or perry, but not to the exclusion of the indifferent wines of the neighbouring vine country. None of these dwellings were without gardens filled with vegetables, amongst which were potatoes (now generally cultivated to a great extent in one half the departments of France) the Swedish turnip, the red beet, and different sorts of spring and summer cabbage, peas, &c. It was delightful to see such a vast tract of country without a symptom of distress or poverty; every thing bespoke ease of circumstances, content, and improvement. The country itself assumed a different aspect; enclosures became common on an entrance into the ancient province of Maine, increasing in number till, in Lower Normandy, they were general; the hedges filled with trees, oak, elm, ash, and acacia, which might well vie with the beautiful hedgerows of England.* The wheat and oats promised every where an abundant crop; barley they grow very little of in this part of the country. Sarrasin (buckwheat), which is cultivated to a large extent, was not sown till the following month, but preparations for the reception of its seed, and for manuring the land for it, were going forward on a large scale. Whilst the winter vetch was being cut, spring vetches were being sown, as well as the turnip-rooted cabbage, haricots, and colza [*Brássica* campéstris oleífera *Dec.*].

From Le Mans northward the rich greensward of pastures and meadows, intermixed in fair proportion with the arable lands, remind the English traveller of his own verdant isle; indeed, the whole of the scenery about Le Mans is in the style of the very richest and most beautiful parts of his own country; and, without being conscious of any prejudice against France or its people, I confess my English taste would lead me, in defiance of all the high authorities to the contrary, to call the neighbourhood of Le Mans a garden, in preference even to Touraine; but it is a garden of a different kind, a landscape rather than a fruit garden.

Between Alençon and Couterne the road ascends, and finally crosses a lofty ridge of hills, which divides the department of the Sarthe into upper and lower grounds; and the traveller is introduced to a country on a much higher elevation than the one he has left; a fact, of which he is soon convinced by the difference of temperature, and its evident effects upon the productions of the soil. Nevertheless it is a fine undulating country, rich in corn, though not in wine or oil; full of timber trees, and teeming with orchards. Here, in fact, begins, on the south, the vast orchard country of Normandy, which extends even to the north of the Seine; but it possesses still stronger charms for an English eye in the superior abundance of its green meadow and pasture lands. Flax and hemp are cultivated on an extensive scale in the department of La Sarthe, and apparently with success; Alençon being famous for its manufactories of the finest lace. The road from Alençon to Couterne runs for several leagues through the department of La Mayenne; and at the latter place, the road for Bagnoles Wells diverges to the north from the main road to Condé, Falaise, Caen, &c.

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* When I here speak of beauty in hedgerows, I would be understood not to mean the straight line of trees, but the general effect which stores of timber thus raised has on the scenery of a country.

From Couterne to Bagnoles is, by repute, two French leagues; the road, which is in places very indifferent, is also circuitous, but its course is through a beautiful richly wooded valley, which, for some distance, appears to the traveller to be effectually blocked up by a ridge of high and nearly perpendicular rocks, in a chasm or glen of which the warm baths of Bagnoles are most romantically situated in a recess of the vast forests of the Ardennes. — *John H. Moggridge. Woodfield, Aug.* 17. 1831.

Paris, August 15. 1831. — Very little has been done here in the way of gardening for the last year and upwards, owing to the agitated state of the public mind. In general, a great many trees for transplanting are sold in the Paris markets during the winter; but last year most of those brought in from the distant nurseries were, after being repeatedly exposed, either bought by the Paris nurserymen for such a trifle as would hardly pay their carriage, or taken home again. Fortunately, the winter was remarkably mild, otherwise most of these trees would have been killed. There have been a great many workmen of different kinds, about Paris, out of employ, ever since July, 1830; many of these the government has occupied in improving the roads, and straightening the course of some streams that empty themselves into the Seine. Several of our public men here think it the duty of government to maintain a reserve of labour, in the form of public works, for the lowest class of labourers, when they shall be out of employment; and, perhaps, this may be desirable, till this class becomes more enlightened by the national system of education, established since the late change in the government. You are aware that almost every mechanic or manufacturer in France knows something of soldiering and gardening; the latter circumstance arises from the almost universal spade culture in this country. Thus it is that these men make by no means bad field labourers or even gardeners. Should the ensuing winter prove favourable, it is said to be the intention of government to plant Montmartre, and also those hills where the manufacture of poudrette [night-soil dried and in powder] is carried on. This rising ground, you will recollect, is of considerable extent, and forms a bold and varied outline.

I do not remember to have seen a larger crop of elm seeds than there is this year in the Champs Elysées [Vol. VI. p. 646.], probably owing to the very fine weather which we had about the end of February and beginning of March, when they were in bloom. The seed began to fall about the beginning of May, in such quantities, that in a few hours any person might have swept up many bushels. In various places where buildings are going on, and the surface of the ground has been left rough and neglected, the seeds, which had been blown there, are now coming up by thousands; so that you see it would be easy, by a few years of neglect, to render Paris and its environs again one immense forest. — *T. E.*

M. Vilmorin's Gardener at Verrières. — Sir, In your notice of my gardener at Verrières (p. 18.), you were correct in saying that he is no great scholar; nevertheless he does read sometimes, and that in the *Bon Jardinier*. But the following fact will give you a better idea of his spirit of emulation, than any other that I can send you. When I bought the estate of Verrières, fifteen years ago, he was the gardener there; but the whole of the ground being in lawn, except the kitchen-garden, in which he was only required to grow cabbages, carrots, and the like common things, the mansion-house being unoccupied, he had never done more than cultivate these articles, and could neither write nor read. It was necessary for my business that the gardener should do both; I was, however, reluctant to dismiss him merely because my business was not an ordinary one, and therefore determined to keep him at least till I had found a situation for him. The first operations I knew he could manage, as they consisted chiefly of trenching and spade-work, and I desired one of his workmen who could write, to do the few necessary writings. Courtois was still in his post when February came, and I sent to him about 100 packets of seeds for sowing on the hot-beds, many of them with odd botanical names, which he had never heard of, and which I supposed his workman would register as well as he could. The next time I went to Verrières I asked for the garden-book in order to examine whether they had been properly entered, and I was astonished to see that the whole collection was in another handwriting; I enquired how it was, and found that Courtois had been himself the scribe. He had been to school every night during the winter, without informing me, and was now able to perform that part of his business tolerably well. This evidence of the man's mind convinced me that I had no occasion to look out for another gardener, and I did not hesitate to settle him in the place, notwithstanding his ignorance of nearly all the things he was to cultivate. After the first year's instruction he has proved to be exactly what I wanted, and perhaps did better than a learned full-grown gardener would have done. He has staid with me the last fifteen years, and I hope will remain as long as I live.

There is nothing very extraordinary in these particulars, though the main fact is worth your knowing, and I am sure you would have mentioned it had you been acquainted with it when at Verrières. — *M. Vilmorin. Paris, June* 21. 1831.

GERMANY.

Stuttgardt, July 14. 1831. — Our venerable royal gardener, M. Richter, was buried yesterday; and I shall probably send you some account of him. I have increased our pine-apples considerably; so that, besides 150 fruiting plants, I have got a great many suckers. I translate some useful articles from the Gardener's Magazine, for the Hohenheim Institution, where they are much approved of. I expect soon to commence a correspondence with some of the principal gardeners in Germany; and whatever I receive, that I think will be interesting to English gardeners, I shall send you. — *W. Hertz.*

Berlin, Aug., 1831. — Gardening is almost at a stand in Prussia, as in most other parts of Germany. You will have seen M. Rauch, who has left Vienna on a tour of a year or two; and he intends spending one year in England. I hear that you will soon see one of the Baumanns from Bollwyller; and M. Petersen and another gardener from Denmark, I hear, are now in England. — *L.*

Substitute for Mulberry Leaves as food for the Silkworm. — Dr. Sterler of Bavaria has found that the leaves of the *A'*cer tatáricum, a hardy tree common in our nurseries, may not only be substituted for mulberry leaves, but are even preferred by silkworms. (*Mechanics' Magazine*, vol. ix. p. 15.)

RUSSIA.

Kuskòvo near Moscow. — Sir, As you ask for additions and corrections to your *Encyclopædia of Gardening*, I venture to send you this short account of Kuskòvo; though, I have no doubt, the same person who supplied you with your notice of Astankina could have done it better: — Kuskòvo is a country-residence belonging to Count Dmitrii Nikolaivitch, about eight versts [six miles] to the south-east of Moscow. The mansion has an extensive front, terminating at one extremity in a church, and at the other in an immense group of log-houses, used as outer offices, and as lodgings for peasants. In front is a court, enclosed by an iron palisade; beyond this there is a hollow, across which a bank has been thrown up to retain a few acres of water. The bank, however, is placed in the most conspicuous point of view, and spoils the effect, by showing the naked hollow on one hand and the raised dam of water on the other. The garden front of the house looks into a natural forest, part of which has been cleared away; and the ground, after being smoothed, has been interspersed with walks and ornamental objects, and kept as pleasure-ground. In the same natural wood is the kitchen-garden, walled round with an extensive range of hot-houses, narrow, and with steep sloping roofs, in the English manner. In them are grown, to a considerable degree of perfection, all the fruits to be found in the hot-houses of England. This garden and pleasure-ground are under the direction of a Scotch gardener. The park of Kuskòvo consists of a part of the natural forest, and contains many wild animals, including wolves. It has some fine fishponds; and a small yacht, armed with cannon, and surrounded by various small sailing and rowing boats, rides constantly in the lake formed by the dam already mentioned. On Sundays and festivals there is a promenade, at which are generally present the most distinguished nobles, merchants, and common people of Moscow.

[In the above description, our correspondent has deviated a good deal from Storsch, Lyall, and some accounts of the same place which have appeared in this country; but as he is a resident in the neighbourhood, and as we have some recollections of the place, having visited it in 1814, we present the communication as sent.]

Petrowskoy, near Moscow (*fig.* 116.), is one of those imperial palaces which are not surrounded by gardens. It is, properly speaking, a house for the emperor to halt at before entering Moscow from the Petersburgh road. It is in a singular style of architecture; and, as a foreground to the city, has a most imposing, and at the same time harmonious, appearance. It was built during the sway of Potemkin, by the same architect who designed Zaritzina. — *S. P. Moscow, April* 5. 1830.

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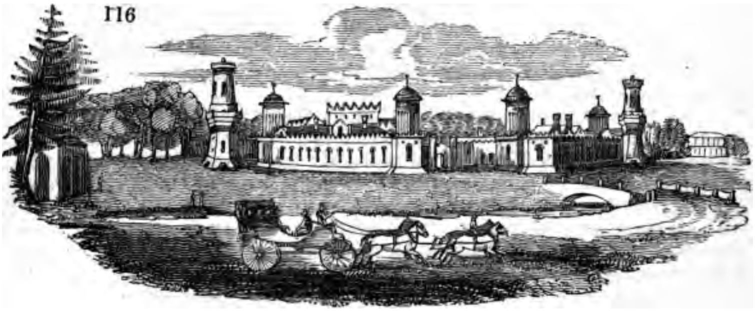

DENMARK.

The Scenery in the Park of Jægersborg. — Sir, In your description of the park of Jægersborg (Vol. V. p. 72.), you have omitted to notice what is generally considered to be the finest scenery in Denmark, viz. that surrounding the Esrom Lake. I send you a sketch (*fig.* 117.), which, if you think fit to engrave, will, I think, convince your readers that we have some as fine scenery in this part of Zealand as you have in Worcestershire or on the banks of the Thames. You will see in the sketch a small cottage, with a white gable-end at the further extremity of the lake on the left. In this abode once lived a worthy old English gentleman, John Good, Esq., for many years a merchant in Copenhagen. Here he spent the evening of a well-employed life, in the society of an amiable and accomplished daughter. He laid out an excellent garden, with extensive shrubberies and lawns, and he spared no expense in procuring seeds and plants from his native country. In the neighbourhood of the same lake there are some other English and French merchants, who have what we think very fine country-houses and gardens, though far inferior, I confess, to those of England. A number of English and Scottish families have also settled here since the peace of 1814; and, I believe, they are perfectly satisfied with their situation and circumstances. I have lately seen M. Petersen, who takes great pains to procure you every information he can. He informs me that he has lately procured, for your *Encyclopædia of Gardening*, a history of gardening in Sweden; which, from the quarter whence he obtained it, will, I know, be most valuable. I hope you have received it. [We have; and it shall appear, when translated, in an early Number.] — *J. Rötboll. Copenhagen, Aug.*, 1831.

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The Flòra Dánica was begun in 1756, by Oeder, who produced ten fasciculi, and died. Müller, between 1771 and 1783, produced five fasciculi. From 1783 to 1804, Martin Wahl added six fasciculi to the preceding fifteen. From that time, the work has been in the hands of Professor Hornemann, who has published twelve parts, each containing 180 plates, and describing in all 900 species. "When the work may be completed it is impossible to say. The flora of Denmark comprises about 5000 species (1600 cotyledonous and 3200 acotyledonous); of which, though the work has been seventy-four years in progress, and, for the greater part of the time, indefatigably edited, only 2200 are yet published: so that little more than two fifths of the labour has yet been performed." (*Brewster's Journal*, July, 1830, p. 205.)

HOLLAND AND THE NETHERLANDS.

Barking the Stems of Fruit Trees and Vines. — My gardener here, who is reputed one of the best fruit-gardeners of the district, and has been more than once strongly pressed to go to the neighbourhood of Paris, has, what he declares to be a never-failing method of greatly improving the quality and size of the fruit on apple and pear trees and vines. At the winter pruning which is here given in February, he cuts off with his common hooked pruning-knife all the outer bark down to the liber of every tree above eight or ten years old; not so deeply, however, with the young as with the old trees. I am assured by some of my neighbours that this man's practice has never failed of being successful; and another Englishman who has tried it assures me that since he had his trees *nettoyés* (such is the term), he has always had larger and better-flavoured fruit. — *J. Heseltine. Tournay en Belgique, June* 6. 1831.

The practice was brought into notice in Britain by Mr. Lyon of Edinburgh, about fifteen years ago, and is not uncommon in England, with apple and pear trees, and very general with regard to vines under glass. — *Cond.*

General Improvement. — "The Reign of the Mind." The Central Committee of the Belgian Provisional Government has issued a decree repealing all the laws and regulations previously imposed on the open expression of opinion, and declaring every man free to propagate his doctrines, religious or philosophical, by discourse, by the press, or by teaching, without hinderance or molestation. This is far more liberal than even the French reformers, and sets your boasted liberty at defiance. However, you may console yourselves with one thing, viz. that so great a good will not exist long in any country without finding its way into those which are around it. Good laws are like travelling plants; and you know that a single plant of spearmint would soon cover the island of Great Britain. —*H. J. Brown, jun. Brussels, Oct.* 3. 1831.

ITALY.

Genoa, Sept. 4. 1831. — Notwithstanding the troubles which have afflicted this country for some time past, we still seem to be going on with different horticultural and agricultural projects. Gallesio's splendid work on the fruits of Italy continues to appear in quarterly numbers; and, at Placentia, a *Horticultural Review* has lately been commenced, which professes to give some account of all the European works on gardening as they appear, with extracts from those considered the most important for Italy. When do you intend to give us the Life of Vilaresi, which Mr. S—— sent you two years ago? — *R. M. S.* [It is translated, and shall appear as soon as we can find room.]

Method of obtaining the Oil from the Olive. — Happening to cast my eyes upon the paragraph entitled the "Olive," in your *Encyclopædia of Plants*, I found that the processes there given, both for grinding the fruit and propagating the trees, are different from those of our best Italian horticulturists; and knowing that you desire just criticisms to be made upon your works, I take the liberty of offering a few remarks upon both subjects.

After the olive is broken in pieces, it is put (you say) into woollen bags, and then pressed. Woollen bags soil very easily, and are very difficult to clean; they consequently soon contract a bad smell, as the oil with which they are saturated very soon becomes rancid from exposure to the air. This, of course, must spoil the fresh olives that are put into them; and, consequently, the oil made by those who use woollen bags is never so good, nor has so exquisite a flavour, as that made by those persons who employ bags of linen, hemp, or rushes. This last kind of bag (that of rushes) was constantly used in the last century by the best olive-breakers (infrantei) on the banks of the Lake of Como.

Speaking of the Propagation of the Olive Tree, you say, that "it is also propagated by chips of the stool in the following manner: — An old tree is cut down, and the *ceppo* or stock is cut into pieces of nearly the size and shape of a mushroom, and which, from that circumstance, are called *novoli* (instead of which you should read *uovoli*). Care is taken that each *novoli* (*uovoli*) shall have a small portion of bark." What is the origin of these *uovoli*? They are knots, swellings, or tumours, in the wood, occasioned by the sap not flowing freely to the root, but swelling through the bark of the stock, and thus forming excrescences containing embryo buds. One may compare the *uovoli* to bulbs, because they possess the faculty of producing a plant. In order to separate them from the trunk, it is necessary to cut them close; and, by introducing a good sharp penknife between the trunk and the *uovoli*, the latter may be easily detached. The mother plant does not seem to suffer the slightest injury by this operation, and continues to vegetate and bear fruit just the same as before. — *Luigi Manetti. Office of the Administration of the Imperial and Royal Park of Monza, near Milan, in Lombardy, Sept.* 8. 1830. [Farther remarks by Signor Manetti in our next.]

MALTA.

Introduction of British Fruits, by Captain Rainier. — Sir, I beg to acquaint you, that, about a year and a half since, I visited the Island of Malta, on my return to this country from Egypt, and was surprised to find (with their fine climate) that they had so few of our fruits. I only noticed two or three sorts of pears, the best of which is that known in this country as the Kew Pear, or Williams's Bon Chrétien, which, I was given to understand, by an old inhabitant, had been on the island forty years. In November last, His Majesty's ship Rainbow sailed from Portsmouth for Malta; and Captain Sir John Franklin, who commanded her, kindly offered a passage to a selection of our best pear, apple, and plum trees, which I had ordered for the purpose of supplying the island with better fruit, together with some of our best strawberries, currants, and gooseberries. These I sent by him, and have just heard, not only of their safe arrival, but that they are all doing well. My object in writing to you on this subject is not to obtain for myself any credit for this act, but to stimulate, if possible, the Horticultural Society of London to do their duty. What I have done they ought to have done. Perhaps, by making public what I have said (in any way you may think proper), this great horticultural body may be induced to supply the wants, in this respect, of our possessions at the Cape of Good Hope, New Holland, and others of our distant colonies, where the fruits of Europe would flourish. They might even send European trees and plants to China, considering how largely they have drawn on that part of the world for plants; and I am satisfied it would have a good effect, the Chinese supposing (as they do with regard to every thing else) that they are the first gardeners in the world. I brought a new *Pancràtium* from the foot of Mount Sinai, which is doing well. I am, Sir, yours, &c. — *J. Rainier, late F. H. S. Southampton, Feb.* 18. 1831.

INDIA.

The Agricultural and Horticultural Society of India have directed me to request your kind attention to the present circular: — "The Society are convinced that the freest possible exchange of the natural productions of every country will be found in the end most conducive to the prosperity of all; and, guided by these principles, they desire to offer both to societies and individuals in every quarter of the globe any of the agricultural and horticultural products of India, or any information relative thereto, which may be desired, in exchange for such as may be forwarded or communicated to them. It will be most gratifying to the Society if you can point out to them any desiderata which can be supplied from India, or if you can by any means forward to them seeds, plants, useful communications, or suggestions. The Society will feel much obliged by your giving every publicity in your power to this communication. I am, Sir, yours, &c. — *Henry Piddington, Foreign Secretary to the Agricultural and Horticultural Society of India. Calcutta, Oct.* 1. 1830.

ISLE OF BOURBON.

The Botanic Garden here has lately been very richly endowed by the French king, and contains, besides the productions of the island, a splendid collection of African and Asiatic plants. It is situated on a rising ground in the middle of the town, and occupies 5½ hectares, or about 14 English acres. Besides this, within the last three years there has been established a "jardin de naturalisation," or a garden expressly devoted to the purpose of reducing foreign plants to bear and thrive in the climate of the island; a most useful institution, and one to which we would call the attention of our Van Diemen's Land Society, as well as of the Government and of our readers generally. It contains about 8 English acres, and, together with the botanical garden, distributes upwards of 10,000 trees and shrubs annually among the colonists in this most improving little island. M. Brecon, a gentleman of high literary and scientific attainments, superintends the management of both gardens. There are 65,000 hectares of land, or about 170,000 acres, in cultivation in the island, nearly one half of which is in corn, about one fifth in cassada (Játropha *Mánihot*, a tuberous root, which is grated, and a poisonous juice extracted from it, and then baked in cakes for bread [see its history, p. 470.]), and the remainder in gardens, cocoa, coffee, cotton, and spices. (*Hobart Town Courier*, July 17. 1830.)

NORTH AMERICA.

Bartram's Botanic Garden on the Schuylkill, near Philadelphia. — Sir, You have done injustice to the memory of the first naturalist the United States had, and the first American scientific horticulturist, by not publishing my correction of Mr. Buel's singular omission of this garden in his article "On the Horticulture of the United States of America," in your Vol. IV. p. 193. I am, Sir, yours, &c. — *James Mease, April* 4. 1831.

We ask pardon of our esteemed correspondent for this inattention, and now publish his communication, which has lain by us from the middle of 1829. — *Cond.*

In his account of the horticulture of the United States, published in your Vol. IV. p. 193., Mr. Buel has omitted to mention Bartram's botanic garden on the Schuylkill; and Mr. Gordon in his communication (Vol. IV. p. 463.) barely names it as "Carr's." It deserves particular notice; because it was the first attempt to establish a garden for the reception and cultivation of native and foreign plants and trees in North America, and because it is still conducted by Mr. Robert Carr with great zeal and success.

It is situated on the Schuylkill, about ten miles S.W. of Philadelphia, and is now about twelve acres in extent. The original proprietor, John Bartram, although a man of slender education (for schools were scarce in his youth in Pennsylvania), was an enthusiastic botanist, and of the most amiable disposition. His grandfather Richard came from England with the emigrants under Penn, towards the close of the seventeenth century, and settled in the county of Philadelphia. John was bred a farmer, and laboured in that vocation for the support of his family; but from an early date was enamoured with the study of botany, and made extensive tours throughout North America, to collect trees, shrubs, and plants, which he transferred to, and cultivated in, his garden on the Schuylkill. Neither personal difficulties nor dangers from Indians deterred him. He explored our highest mountains and the western lakes, and at the age of seventy years embarked for South Carolina, travelled through that and the adjoining states and Florida, ascended the river St. John 400 miles in a boat, and descended on the other side, until he reached the sea. His notes on this great river, its branches and lakes, and the country through which he passed were sent to the Board of Trade, by which they were published for the benefit of the young colony. He was the first person who made the transmission of the vegetable productions of North America to Europe a regular business; and in this he was engaged for upwards of forty years to a great extent. The gardens of England are filled with trees and plants, the originals of which he sent to their proprietors; and Linnæus received many presents from him of curious and interesting plants, and the seeds of others, the value of all which was gratefully acknowledged by the great systematist. He was early in correspondence with Peter Collinson of London, who was his agent and warm friend, and with many of the most eminent cultivators of botany and natural history in Britain and on the Continent; particularly Gronovius, Dalibard, Sir Hans Sloane, Catesby, Dillenius, Fothergill, George Edwards, Philip Miller, and Targioni. A mass of letters from these and others are still preserved; but many have been lost. At the suggestion of Dr. Hope of Edinburgh, the Royal Society presented him with a gold medal for the services he had rendered to the cause of natural history; and, through the interest of his friend Collinson, he was elected a member of the Royal Society of London and of that of Stockholm. His two sons, John and William, continued the garden. The latter was the counterpart of his father in moral excellence, amiability, and love of natural history, and his superior in science. He accompanied his father in his southern journey, and published his travels, which are known to all literary men. The present proprietor, Mr. Robert Carr, who married the daughter of John, enlarged the garden, and has been extensively engaged in the business of it for several years past. — *J. M. Philadelphia, May* 13. 1829. [The genus of mosses Bartràm*ia* commemorates Mr. John Bartram, the subject of the above memoir.]

From the same obliging correspondent we received, on May 8. 1831, " No. 7. of Vol. VII. of the *Register of Pennsylvania,* published at Philadelphia, Feb. 12. 1831." This work, to use its own motto, is " devoted to the preservation of every kind of useful information respecting the state;" and, besides various interesting articles on other subjects, contains a " Report of the Committee appointed by the Horticultural Society of Pennsylvania for visiting the Nurseries and Gardens in the Vicinity of Philadelphia." The committee's visits were made in 1830, and their report occupies 6½ close-printed quarto pages. Much of its interest is necessarily local; but it contains many remarks on American gardens, operations, and plants, of general interest, which we may subsequently quote. In concluding their report, the committee remark: — " Within these last twenty years, establishments of a botanical and horticultural character have greatly multiplied, and with them books on American gardening, all tending to a general improvement, and liberally supported by a steady demand. Gentlemen have caused to be brought from abroad, likewise, the most esteemed fruits and vegetables, and we are happy to say that the climate of the United States is eminently favourable to the growth of all European and most of the Asiatic fruits. To be sure, the *C*urcùlio and many other enemies, offer serious obstacles to their complete and perfect cultivation; but, with appropriate zeal and skill, these insect foes may be vanquished. Floriculture has made immense progress within ten years, and is now pursued with an avidity that astonishes even the European practical visiters. Our gardens at the present day are decorated with rarities that money could not purchase a few years ago. Every thing in this lovely department of nature, as well as in those of substantial horticultural usefulness, appears to grow with our growth, and keep pace with the increase of riches, by a commensurate display of good taste and patronage."

Gardening and Gardeners in America. — We are not certain that the writer of the following letter intended any part of it for publication: but it is so good that we cannot refrain from giving it to the public; omitting all names of persons and places, in order to avoid giving offence, either to our excellent friend or to any of the parties mentioned: —

" Sir, I have the honour of acknowledging the receipt of your letter of April 15. last. A distant journey to our mountains has detained me from home several weeks, and prevented an earlier answer. I beg you to accept my most grateful thanks for your kind attention to my request, &c. It is chiefly in ***** that **'s services will be required, although his help will be requisite in my green-house, &c. I cultivate no more esculent plants than are required for my own family, and my American collection is under my own care. I keep from twelve to twenty men and boys nearly all the year. My last foreman has settled in the western country on a farm: the one before him was Mr. ****, who is now a master-gardener in good circumstances. Some of my workmen have been with me fourteen or fifteen years, and it is probable they will remain with me as long as they live. It is no less strange than true, that we have few or none of our natives gardeners. Even where brought up in our gardens, they almost invariably prefer the plough and farming-work; and have a strong dislike to weeding, &c. &c. They are generally very dexterous and handy with tools, and can do almost any thing required in the use of them. On the contrary, the European gardeners who come here are generally unaccustomed to any tools but the spade and hoe, and care but little to learn the use of others. If any alteration is required, or mending wanted, they immediately require the assistance of the carpenter or the smith for trifling things that one of our boys could do with a hatchet and knife, if he could not procure other tools. This helplessness renders them the laughing-stock of our workmen; particularly when they assume such importance and consequential airs as they most generally do on their first arrival here. A few years since, a young gardener arrived here from Ireland, without a friend or acquaintance, and having paid his last guinea for his passage. I gave him employment until I procured a very good situation for him at 180 dollars per year, and board and lodging. His employer was ** ***, a quaker gentleman, who was much pleased with him, and treated him very kindly. His only care was a small vegetable garden for the use of the family; and, indeed, it was the only branch of gardening for which he was competent. Unfortunately a tavern was too near, and here liquor is too cheap: he soon began to tipple, and neglect his work. He had soon accumulated 100 dollars, and had a crop of fine early potatoes, amongst other things, in the garden. It was Sunday morning, and some friends arrived to dine with Mr. ***, who asked Mr. **, the gardener, if he would dig a few of his fine potatoes for the dinner, as the boy was absent. To this request from the old gentleman, Mr. **, the gardener, replied, swelling with indignation, 'Is it me — me, Sir, a thorough-bred gardener, that you would ask to dig potatoes?' 'Surely, friend **,' replied Mr. ***, 'thee hast toiled to raise them, and it can be no disgrace to dig a few for one dinner; however, give me the spade, and I will dig them myself.' The next morning he paid him off, and discharged Mr. **. This, Sir, is the manner in which many of your gardeners conduct themselves on their arrival here; and they are very frequently ignorant of their business. Still we are very far behind you in gardening, and willing to learn all we can from such as come here. In this country no white man calls another "master†," and land is so cheap that a few years' wages is sufficient to purchase a snug farm and stock it. This natural love of independence and comfort carries nearly all the good gardeners to our western country, where they settle as farmers. I am, Sir, yours, &c. — *R. C. Near Philadelphia, July* 10. 1831.

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† In mentioning this term "master," which is obsolete here, I may remark that I never knew a native American who wore livery; nor would extra wages induce them to put it on. I have frequently made the enquiry, but always found that those in liveries were foreigners. Neither are there in America any steerage passengers in the packet boats; there is one cabin for the ladies and another for the gentlemen, in which all, whether master or servant, mix on a footing of perfect equality. It is the same as to stage coaches, which have only one fare, and neither the coachman nor any of the servants at the inns receives a farthing from the passengers or customers. All that takes place between man and man in this country is on the principle of equitable exchange; there is considered to be no obligation on either side.

A Geographical Garden. — An American gentleman of the name of Hill has petitioned congress for a grant of land and a sum of money, to enable him to put in practice a plan he has formed of a geographical garden. The ground allotted for this purpose is not to exceed 10 acres, and within that limited space he purposes to delineate accurately every known part of the world, agreeably to the principle of Mercator's projection. The beds of oceans, seas, gulfs, bays, and lakes are to be depressed; the continents, peninsulas, isthmuses, mountains, islands, &c. elevated; parallels of latitude, meridians, equator, ecliptic, tropics, and other circles correctly laid down; the channels of rivers described as in their natural courses, and lowered in proportion to the height of their respective banks. The beds of oceans, &c. are to be covered with gravel, the land adorned with verdure, and the mountains furnished with such bases as geology points out, and, if necessary, the former are to be so constructed that they may be filled with water at any time; so that the *coup d'œil* will give a miniature representation of the whole world in its native elements. (*Dumfries and Galloway Courier*, Aug. 10. 1824.)

The above project bears some similarity to Mr. Main's "Outlines of a Plan for the formation of a Classical Garden," given in p. 432. — *J. D.*

Botanic Garden at the College of St. Mary's, Baltimore. — A botanic garden has just been commenced at St. Mary's College in this city. Meeting with great obstacles in the formation of a collection, and understanding that distributions for the diffusion of the science were often made by the establishments in the United Kingdom, I thought it would be my duty to endeavour to draw to ourselves a portion of this bountiful supply. Therefore, Sir, if you can procure for us collections of plants from any of the public institutions of your favoured country, you will confer a very great favour, a lasting benefit, on the institution of which I have the honour to be a member. Yours, &c. — *H. T. Dickehut, Curator, Bot. Garden, S.M.C.*

P.S. A correspondence with any of the great nurserymen and botanic gardeners in London, or elsewhere; Messrs. Loddiges of Hackney; Mr. Colvill, King's Road; Messrs. Lee of Hammersmith, or others; would be particularly desirable; and we would be under great obligations to you to procure them for us. — *H. T. D.*

The Charlieshope Beehive. — Sir, Among the various beehives figured both in your *Encyclopædia of Gardening* and in this Magazine, I have not seen any notice of one in general use in the southern part of North America. I send you some rough sketches of this hive (*fig.* 118.), which may be thus described: —

a, A front elevation of the hive, as seen resting on the cleats or strips of wood (*l*) used as supports. The size of the hive is 15 in. square at the top, and 7 in. square at the bottom. The back board of the hive is 2¼ in. shorter than the front board; in consequence of which the bottom board has an inclination of 2¼ in. as represented by the side ones (*b*, *d*).

c, The hive tilted, showing the inside, and the seven triangular recesses *n*, which are cut about a quarter of an inch deep into the back and front boards.

d, The platform on which the bees alight.

This platform is a continuance of the bottom board, and contains a hole of 3 in. in diameter (*e*), on which is nailed a round piece of tin, perforated like the rose of a watering pot, for the purpose of giving the hive air.

(*f*) The cover of the hive, with a band running round it of 3 in. in depth; covering the hive like the cover of a bandbox. The upper rim raised high enough to receive the box (*g*), which is exactly 15 in. square, and made to fit into the rim of the cover (*f*). This cover must be 15¼ in. square, in order that it may be taken on and off with ease. The four dots in the cover are auger holes of an inch in diameter, through which the bees pass into the upper box.

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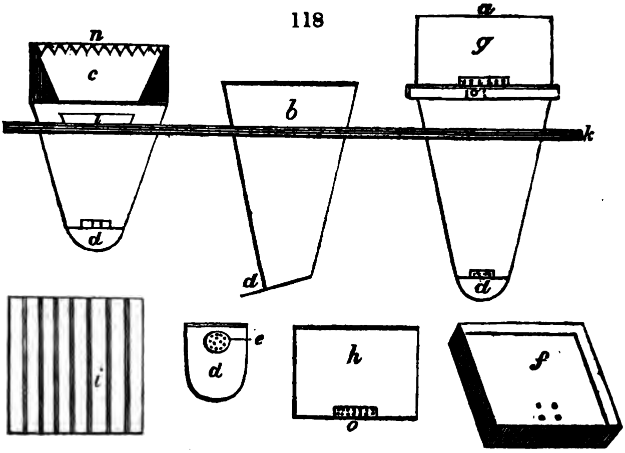

h, Elevation of the top box, 8 or 9 in. in height; open at the bottom, with a ventilator of perforated tin about 2 in. high and 3 in. long, *o*.

i, A top view of the hive *b*; the outside sticks, seven in number, rest in the triangular recesses *n*. The sticks are also triangular and will fit in, in any way.

10, The band of the cover: the four dots are small holes through which nails or pins are put to keep the cover on the hive; and likewise to keep the box *a*, from being blown or knocked over.

d (in the box *c, n*), The entrance for the bees, 2½ in. wide, and half an inch high. At night a small-meshed wire net, as shown *o* and *d* of box *a*, might be put before this entrance; but, in that case, care must be taken to remove it very early in the morning.

k, Scantling running the whole length of the apiary. The cleats (*l*) rest on two pieces of such scantling; and the hives are thus supported between the two. The cleats that are nailed to the hive serve to keep it steady on the scantling.

The following remarks are by a bee-master, who describes this hive in the *American Farmer*: — "When I intend putting a swarm into one of my hives, I take out three sticks, and then cover the whole top with a piece of thin coarse clean muslin (just so much larger than the hive as to admit of being wrapped over at the corners), and tack it at two corners lightly, to keep the muslin from shoving aside. I then turn over the half of the muslin cover, and holding the hive up shake the bees into it. When they are in, I set the hive in a frame, of which I have several, and then, one by one, gently put in the sticks; the bees, even if they are in the angular recesses, give way to each stick as they feel it pressing on them. When the sticks are in, I turn the muslin over, and, passing my hand gently over the top, whatever bees may have rested on the top of the sticks will move below. I now put on the cover *f*, and leave the hive in the frame until evening, when I put it between the scantlings, where it is to remain. I generally put on the box *a*, as it keeps the hive cool. Mice cannot attack my bees, neither are they liable to robbery; and if any strange bees attack them, they can defend themselves to advantage, for they stand on higher ground than the assailants. The bottom, being an inclined plane, facilitates the removal of every kind of excrementitious matter, such as dead nymphs and bees, and all the little particles that are usually found in a hive. Noxious vapours are carried off by means of the lower and upper ventilators, and the bees never suffer from rain, the slope carrying it off. The rays of the sun, too, from the receding shape of the hive, have not as much power as if the hive were straight; and lastly, as the entrance (*d*) can be closed at pleasure, the hive can be carried to a good pasture, and set in form without my fearing a sting. There are many other advantages attending this hive, which the apiarian will soon discover."—*T. Sept.* 1830.

Origin of Prairies. — The origin of prairies has occasioned much theory: it is to our mind very simple: they are caused by the Indian custom of annually burning the leaves and grass in autumn, which prevents the growth of any young trees. Time thus will form prairies; for, some of the old trees annually perishing, and there being no undergrowth to supply their place, they become thinner every year; and, as they diminish, they shade the grass less, which therefore grows more luxuriantly; and, where a strong wind carries a fire through dried grass and leaves, which cover the earth with combustible matter several feet deep, the volume of flame destroys all before it; the very animals cannot escape. We have seen it enwrap the forest upon which it was precipitated, and destroy whole acres of trees. After beginning, the circle widens every year, until the prairies expand, boundless as the ocean. Young growth follows the American settlement, since the settler keeps off those annual burnings. (*American Quarterly Review*, March, 1829.)

Dates in South Carolina. — The *Beaufort South Carolina Gazette* mentions that a date tree is in full bearing at Mrs. Elliott's, on Hilton Head Island. It is 8 or 10 ft. high, resembling the palmetto, and springing up from the stone of an imported date. (*Newspaper.*) — *J. M. Sept.* 21. 1829.

In the Gardens of Chapultepec, near Mexico, the first object that strikes the eye is the magnificent cypress, called the cypress of Montezuma. It had attained its full growth when that monarch was on the throne (1520), so that it must now be at least 400 years old; yet it still retains all the vigour of youthful vegetation. The trunk is 41 ft. in circumference, yet the height is so majestic as to make even this enormous mass appear slender. At Santa Maria de Tula, in Oaxaca, is a cypress 93½ English ft. in circumference, which yet does not show the slightest symptom of decay. (*Ward's Mexico.*)

The Banana (Mùsa sapiéntum) forms the principal vegetable food of the Mexicans; yet it has been asserted that the plant is not indigenous. The reasons detailed by Humboldt render the truth of this opinion very doubtful. The amount and rapidity of produce of this plant probably exceed that of any other in the known world. In eight or ten months after the sucker has been planted clusters of fruit are formed, and in about two months more they may be gathered. The stem is then cut down, and a fresh plant, about two thirds of the height of the parent stem, succeeds, and bears fruit in about three months more. The only care necessary is to dig once or twice a year round the roots. According to our author, on 1076 square feet from 30 to 40 banana trees may be planted in Mexico, which will yield in the space of the year 4414 lbs. avoirdupois of fruit, while the same space would yield only 33 lbs. avoirdupois of wheat, and 99 lbs. of potatoes. (*For. Quar. Rev.* April, 1829, p. 179.)

It may be gratifying to contrast this rapid rate of growth in Mexico, with that of its sister species the plantain tree (Mùsa paradisìaca) in a British stove, as described, p. 676. — *J. D.*

The Sunflower as an Oil Plant. — Will you believe it, Sir, that in the county of York, in Pennsylvania, there will this year be 200 acres of land planted with sunflowers (Heliánthus ánnuus). My neighbour, E. A. Barnit, Esq., is now putting out 10 acres. It is done with a view to the oil. This gentleman has erected machinery to extract and prepare the oil: he finds that one bushel of the sunflower seed will give a gallon of very superior oil; and that the cake is excellent food for cattle. An acre of good land produces from 60 to 75 bushels of the seed. The culture is the same as that of the maize. The farmers can afford to raise it at 25 cents [1*s.* 1*d.*] per bushel. A good deal was done last year, but that was only to be viewed in the light of an experiment. — *J. L. York, Pennsylvania, May*, 1830.

High and equal Education. — Your views as to high and equal education are most correct. We have an example of it in the United States. From the first settlement of the country here, education has been, in a measure, universal. If our government is better than that of any other country, it is because more attention is paid to the education of the mass of the people. Is not our government better than that of England? It furnishes the same protection of individual rights at one twentieth of the expense; and, as to individual comfort, there is nearly as much difference between the two countries in that respect. Your correspondent has an income of 6000 dollars (£1300), which doubtless grants him quite as many comforts as could be enjoyed in England from an income of many times the amount. — *J. L. York, Pennsylvania, Nov.* 27. 1830.

AUSTRALIA.

From the *Hobart Town Courier*, which we receive regularly from the editor, we learn that this colony is in a prosperous state; that there is an abundant demand for labour, that wages are high, and that there is no want of markets either for grain or wool. Garden seeds are very high; and practical gardeners, who can combine the duties of nurserymen and garden architects, are very much wanted. — *Cond.*

From the Report of the Agricultural and Horticultural Society of New South Wales for 1830 (Pamph. 8vo. pp. 82.). — There is scarcely any thing in this Report on the subject of gardening; but it appears that all the agricultural plants which have been tried, with some few exceptions, succeed, and some of them in a very remarkable degree. Hops succeed well, and also the sweet potato (Convólvulus); but the common potato is neither so vigorous nor so productive in that dry climate as it is in Britain. The yam (Dioscòr*ea*), on the other hand, arrives at a great degree of perfection. Lucern, as may be supposed, grows luxuriantly. It is easy to conceive that turnips and mangold wurtzel would not arrive at a great size, and that melons, cucumbers, and pumpkins should attain great bulk, and produce enormous crops. Oil is made from the Palma Christi. Cotton produces well; and tobacco, it is supposed, will in time become one of the principal exports, though there is no evidence that it has yet grown very luxuriantly. The common British fruits, with the exception of gooseberries, currants, raspberries, and strawberries, have done tolerably. Mulberries bore well; apples, pears, quinces, and medlars, abundantly. The olive tree, it is thought, will be included among Australia's most favourite and profitable productions. "Oranges, lemons, and citrons are in perfection, well grown, and of good quality. Such shaddocks and lime trees as are of mature age bear abundantly. The winter crop of loquats and guavas is abundant and promising." (p. 22.) The culture of the grape is rapidly extending throughout the colony, and the quality of the wine which has been made gives an encouraging promise of future excellence. The president directs all vineyards to be made on the sides of hills having a south-east aspect, and a light, gravelly, calcareous, or slaty soil free from clay. On his own estate at Regentville, he has employed a German emigrant from the Rhine to form terraces horizontally along the hill, each 7 ft. wide, with a dry stone wall in front to keep up the soil to a level. The growth of the vine is rapid, producing fruit the third year.

From the abuse of spirits, the president is very desirous of encouraging the brewing of beer from the malt and hops of the colony; and it seems that there is an increasing taste for colonial beer.

Rewards for the year 1832 are offered for the culture of tobacco, vines, olives, the castor-oil plant, rapeseed, mustard, and poppy.

A drought of three years and a half, we were informed, "which has happily passed away, in its effects killed more forest trees, and rent asunder the surface of the earth to a greater extent, than has been witnessed at any former period by the oldest colonists. Had we been accustomed to such droughts, we must, like the population of Sicily, Italy, Egypt, and other tropical climates, have irrigated our corn fields from rivers, brooks, and creeks, or from water-holes and tanks; and by such means have insured the growth of our crops. Fuel being everywhere in the greatest plenty, steam-engines erected on rich alluvial flats, where abundance of water can always be had, would pay well, by irrigating the crops to a necessary extent while growing, and afterwards grinding the grain when threshed." (p. 66.)

Of live stock we shall only observe that the Australian fleece, since the general use of Saxon rams, is yearly improving in value with the British clothiers, and that it can be grown much cheaper than in Europe. Mutton has fallen under 2*d.* a pound.

The horticultural committee report favourably of the progressive improvements of the Society's garden; all the young forest trees were rapidly purchased by the members, and the committee expect to be able to offer 8000 for sale next year. The sweet potato of New Zealand, though planted in light soil without manure, and during the prevalence of drought, produced a prolific crop of large size. The committee represented most favourably the skill and success of Mr. Dawson, the gardener, in grafting and budding, and in propagating the olive from cuttings.

Art. III. *Domestic Notices.*

ENGLAND.

The Allotment of Portions of Land to poor Families in Northamptonshire. — Sir, The beneficial application and result of the system of allotting portions of land to industrious poor families in this parish, although as yet upon a small scale, are of a most gratifying nature. About two years ago, a piece of land, about eight acres, belonging to the church, and within a hundred and fifty yards of the end of the village, was allotted in portions of roods, half roods, &c., to such industrious poor men as were desirous of obtaining such small portions of land, at a fair price per pole. The prices were fixed according to the different situations in the field: spade culture was insisted upon, and the rents made payable half-yearly. To prevent any appearance of partiality in the apportionment of the ground, the number of each allotment, with the price affixed, was written upon a slip of paper; and the slips being rolled up, were placed upon a table, for the candidates to choose. All were thus perfectly satisfied. They commenced digging as early in the spring as the weather would permit; and last autumn their crops were so highly productive, as to make several poor men, whose prejudices led them at first to decline portions, now anxious to become occupiers. Others, who are now occupiers, are anxious to augment their portions of land; and, if by any chance a piece of land becomes untenanted, it is instantly an object of anxious solicitude. This was the case a few weeks ago, when one of the occupiers was accidentally killed; and, as a probability existed that his widow would not be able to manage the land after his decease, many applied for the presumed vacant piece. To promote habits of industry and emulation among the poor, the Rev. B. Bouchier, who interests himself very much in their welfare, offered premiums in the spring of the present year to the gardening poor, for the best productions of different kinds of corn, vegetables, &c. These prizes have been awarded, in a very honourable and impartial manner, to those persons who were industrious enough to compete for them.

During the last winter, when wheat bore a high price, and wages to the poor were low, the advantages of this system fully developed themselves, as every poor man who held a piece of land had his garners stored with potatoes, perhaps a little wheat or barley, and in some instances he had also a pig preparing for the knife. The advantages of such a state of things are too obvious to require comment; and the fact that the poor rates are already sensibly diminished is, I think, sufficient to recommend it to every class of society.

As the system, where adopted, has answered the most sanguine expectations of the promoters, nothing more need be said by me to induce landowners and others to adopt measures so easily attained for bettering the condition of so useful a part of society as the industrious labouring poor, who are so essential to the subsistence, as well as the defence, of the state. Allotting pieces of land to the poor is commendable also in a political point of view; as, when the poor man is an occupier of the soil, he becomes identified with it, and has a stake in the well-doing of the state. I am, indeed, convinced that the prevalence of this system would in a great measure prevent that spirit of insubordination which was so lamentably general during the latter part of the last year. I may add, as a proof of my assertion, that during that period of unhappy disturbance, though rioting and insubordination came very near indeed to our village, our labouring poor, almost to a man, came forward to do their duty in repelling violence, and in watching and protecting the property of their employers. So anxious were they indeed to show their zeal in preserving peace and order in the parish, that the magistrates who attended at length desisted from swearing in more special constables, not from want of individuals, but because a sufficiently large body had been enrolled.

I trust the time is not far distant when landowners and others will join and do all in their power to better the condition of the labouring poor, and when in every parish throughout England cottage gardening may be adopted, and by every means encouraged. Yours, &c. — *Thomas Francis. Old Nr. Lamport, Northamptonshire, Sept.* 10. 1831.

Allotments of Land to the Poor. — We feel pleasure in stating, as a proof of the advantages of this system, that the head prize given by the Sheffield Horticultural Society for the best cultivated cottage garden was awarded to a man who has an allotment of land from the directors of the Bedford House of Industry; and that two of the prizes for vegetables were also given to two other men having allotments of the same land. (*Sheffield Iris,* Aug. 9. 1831.)

Bristol promises to stand conspicuously forward in point of Public Gardens.— The magnificent design of Mr. Masey, published in Part II. of our *Illustrations of Landscape-Gardening*, seems, according to the Bristol newspapers, to have been very favourably received by the corporation, and it is thought highly probable (see the *Bristol Mirror* for June 11.) that a part of it at least will be carried into effect. Mr. Miller, as will be elsewhere seen (Prov. Soc., p. 631.), the liberal and intelligent nurseryman, has suggested a plan for turning his nursery into a public botanic garden, to comprise an illustration both of the Linnean and Jussieuean systems, including an arboretum. — *Cond.*

Suffolk Botanic Garden, Bury St. Edmund's. — I was over at Bury the other day: they are very busy laying out a new botanic garden in the Abbey grounds. It is, to be sure, a most eligible spot, yet I think it seems almost a pity to disturb the plants which are now so well established in the old garden. — *J. G. Sudbury, August* 22. 1831.

Taunton Horticultural Society. — The design of forming a horticultural society has been liberally cherished at Taunton and the neighbourhood. E. A. Sanford, Esq., M.P., has acquiesced in the invitation to become president; and several other highly respectable persons have consented to undertake the honorary duties of the society. (*Bristol Mirror*, July 23. 1831.)

Sutton Wash Embankment. — This is said to be one of the grandest public works ever achieved in England. It is an elevated mound of earth, with a road over, carried across an estuary of the sea situated between Lynn and Boston, and shortening the distance between the two towns more than fifteen miles. This bank has to resist, for four hours in every twelve, the weight and action of the German Ocean, preventing it from flowing over 15,000 acres of mud, which will very soon become land of the greatest fertility. In the centre the tide flows up a river, which is destined to serve as a drain to the embanked lands, and has a bridge over it of oak, with a movable centre of cast iron, for the purpose of admitting ships. (*Country Times*, May 16.)

We should be much obliged to any correspondent who could send us a more definite account of the above improvement; that from which we have made this notice being too desultory and laudatory for our purpose. — *Cond.*

Itinerating Libraries. — An itinerating library has been established in Monmouthshire by the Society for the Improvement of the Working Population. The divisions of the library, of twenty-five volumes each, are to be established at six different towns, and the towns or the books changed every six months. Dr. Malkin of Cowbridge is the chairman of this institution. (*Cambrian*, Oct. 1. 1831.)

Our own Representative System (p. 375.). — On our return from Scotland (Sept. 9.) we found all the house plants so liberally presented to us by Mr. Aiton in vigorous health, more especially the green-house species, with only one or two deaths. Of the trees and shrubs, only three, not rare species, have died; and the herbaceous system, which we have been able to render tolerably full, and hope to render quite complete next spring, was all that we could wish it to be. Any of our friends who can supply desiderata may still turn to p. 376., and we should also be glad of a few of the bulbous *Irídeæ* for a border protected by glass. — *Cond.*

The Wire-Worm. — Extract from a communication from Mr. Tallant of Little Houghton, read at the last meeting of the Northamptonshire Farming Society: — "White mustard seed will protect the grain from the wire-worm; and this fact I have demonstrated perfectly to my own conviction. I first tried the experiment on half an acre, in the centre of a fifty-acre field of fallow, which was much subject to the wire-worm. The mustard seed being carried, the whole field was fallowed for wheat, and the half-acre that had been previously cropped with mustard seed was wholly exempt from the wire-worm; the remainder of the field was much injured. Not only was the half-acre thus preserved, but in the spring it was decidedly the most advanced part of the crop; and the prosperous appearance which it presented caused me to repeat the experiment, by sowing three acres more of mustard seed in the worst part of a field of forty-five acres, also much infested with the wire-worm. The remainder of the field was sown with early frame peas, which, with the mustard seed, was cleared in the same week. The land was then ploughed for wheat, and I had the pleasure of noticing these three acres to be quite free from the worm, and much superior in other respects to the other part of the field, which suffered greatly. Thus encouraged by these results, I sowed the next year a whole field of forty-two acres, which had never repaid me for nineteen years, in consequence of nearly every crop being destroyed by the wire-worm, and I am warranted in stating that not a single wire-worm could be found the following year, and the crop of wheat throughout, which was reaped last harvest, was superior to any I had grown for twenty-one years. I am, therefore, under a strong persuasion, that the wire-worm may be successfully repelled and eradicated, by carefully destroying all weeds and roots, and drilling white mustard seed, and keeping the ground clean by hoeing." (*Country Times*, Sept. 1831.)

The reason seems to be, that the wire-worm cannot eat the roots of the mustard, most probably from their acridity, and there being no other roots in the soil for them to live on, and no weeds or other plants than mustard permitted to grow during the season, the insects necessarily die of famine. — *Cond.*

A Larch Tree, cut down at Wallington, Northumberland, in May, 1831, measured 88 ft. in length; at the base 8 ft. 4 in. in circumference, at the height of 40 ft., 5 ft. 10 in., and at 70 ft. 2 ft. 4 in. The age of the tree was about eighty years. (*Jameson's Journal*, Oct. 1831, p. 393.)

Roses on a Tomb. — At Barnes, in the county of Surrey, is a monument surrounded by rose trees, consecrated to the memory of a London citizen, whose name was Rose. To perpetuate the enclosure, he left the poor of the parish twenty pounds; and, in return, directed that they should take care that the rose trees should be perpetually preserved. (*Bucke's Beauties, &c., of Nature.*)

The Rouge Plant. — We noticed, at p. 99., that Dr. Hamilton of Plymouth had received from Mr. D. Fanning, at the Caraccas, seeds of a species of Rivìn*a*, the juice of the berries of which is used at the Caraccas as rouge. Some of these seeds, given last year by Dr. Hamilton to Mr. Pontey, have, under the skill and care of Mr. Pontey's foreman, Mr. Curtin, grown, and even already produced fruit. A raceme of the berries and a leaf have been sent to us by Dr. Hamilton, who, after careful examination, finds the plant quite distinct from both Rivìn*a* læ'vis and R. hùmilis, and he has therefore provisionally named it R. tinctòria, expressive of the colouring property resident in the juice of its berries. We suggest that the plant may possibly prove the R. canéscens of Willdenow, as in its foliage and whole surface it is pubescent and canescent. Dr. Hamilton has also sent us a drawing of *P*apàver somníferum (made by Miss Jane Hamlyn of Plymouth, a lady whose drawings obtained from the Society of Arts, a few years since, the gold Isis medal), the petals of which are coloured with the juice of the berries of this Rivìn*a*, and the effect is satisfactory. On the applicability of the berries to the purposes of colouring, Dr. Hamilton is quite sanguine, and remarks as follows: — The juice of the berries yields a rich and beautiful carmine red stain, affording a singular and novel tint for water-colour drawings, which, if permanent, will prove a valuable acquisition. . . . The tint may be easily varied; and from this juice a fine lake might, I am confident, be prepared in the same manner as those from the madder (*R*ùbia tinctòrum), the safflower (*Cárthamus* tinctòrius), and other vegetable substances; or, possibly, the dried berries might, by trituration with water, be made to give out their colour: at all events, the subject merits farther enquiry."

We have given the berries both of R. tinctòria and of R. hùmilis, sent for the sake of contrast, and which contain seeds, to Mr. Campbell, with whom they have germinated, and produced plants; from these we shall, after a time, be able to submit specimens to some London botanist. Of Rivìn*a* there are seven species cultivated in English stoves; most of them of very free growth, and blooming and fruiting readily and frequently. The elegant racemes of scarlet berries which they bear considerably resemble those of the red currant, and are termed by many English gardeners "Barbadoes currants;" but whether this name be of their invention, or derived from Barbadoes, we cannot say. — *J. D.*

Further Information on the Plantain (*Mùsa paradisìaca*). — Sir, In compliance with your request, I send you a brief account of my mode of cultivating this tropical vegetable. The plant I fruited at Exeter, as described in your Vol. VI. p. 429., had attained considerable height when it came under my care, but was lingering under bad health. On examining the roots, I found the mould quite exhausted, and not congenial to the nature of the plant. I had the soil removed from the top part of the tub, and I then loosened and trimmed the roots, and applied to them a compost consisting of strong loam of an argillaceous quality, decomposed vegetables, and sandy peat, with all which a little lime and soot were intermixed. It is in this compost I grow my young plants. This dressing was given in May, 1829, and by the June following the plant had sent up several splendid leaves, and evinced symptoms of vigorous health. In July it began to show symptoms of flowering, by throwing up a leaf considerably smaller than the former ones; the habit of the Mùsa tribe before flowering. This smaller leaf was quickly succeeded by the spike of flowers, which, in its early state, in form and size much resembled a bullock's heart. When the blossoming had commenced, the spike divested itself of a spathe or sheath, that covered the flowers, almost every succeeding day. I endeavoured to assist nature in setting the fruit, by applying, with the feather of a quill, the pollen to the stigmas, when the atmosphere of the stove was in a dry state. From my plants I never cut off any of the under leaves until they have performed their office and are withered; as when the leaves are cut off too soon, their footstalks exude a considerable portion of sap, and thus exhaust the succeeding leaves. The leaves extend a considerable length, many 10 ft. and are very easily split; which ought to be most cautiously guarded against, as the splitting retards the growth of the plants, and throws them into a stunted state. The temperature I give to young plants is from 60° to 70°; to fruiting plants from 75° to 85°; external heat. I give no bottom assistance. In days of clear sunshine I admit a free circulation of air; and then, as always, attend so punctually to the watering, as never to let the plants get flaccid. The fruiting plants are great consumers of water, as is the case with nearly all arundinaceous [reedy] plants. The plan I adopted to keep the fruiting plants moist was a 4-gallon watering-pot, filled with water, with some twisted worsted to act as a siphon; one end immersed in the water, the other placed over the tubs of the plantain. The tubs that I used were about the size of half a hogshead; but those for the fruiting plants were of larger dimensions. A plantain (Mùsa paradisìaca) or banana (Mùsa sapiéntum) growing freely will throw up a fresh leaf every three weeks or a month, and, with assiduous attention, will keep growing during winter. With respect to the quantity of fruit ripened at Conver, I attribute it principally to the accelerating influence of the genial heat of the thermosiphon. The number fit for table was thirty; a greater number swelled off to nearly full size, and then shrivelled. Doubtless, the season being so dull and inclement prevented many from reaching maturity. The fruit continued in succession for five weeks: some were preserved, which were excellent. A ripe one that I tasted seemed of a farinaceous quality, easy to be dissolved, and of a honey-like flavour. I am, Sir, yours, &c. — *Henry Dalgleish. At B. B. Dickinson's, Esq., Knightshays, near Tiverton, Devonshire, Sept.* 1830.

The rate of growth of the Mùsa sapiéntum, or banana, another species of the same genus, in Mexico, will be found, p. 670. — *Cond.*

Culture of Guavas. — I have been very successful in fruiting both the red and yellow guavas, having had abundant crops, which have contributed to the dessert for several months, with ample supply for preserving and making jelly. I will send you a notice of my treatment. — *H. Dalgleish.*

Large Asparagus. — A few days ago Mr. Grayson, the famous cultivator of asparagus, presented the Duchess of Bedford with a bundle of that delicious vegetable, consisting of 110 heads, and weighing twenty-nine pounds. (*Preston Pilot,* June 4. 1831.)

Enormous Cabbage. — There is now in the garden of Mrs. Diana Archbell of Healaugh, near Tadcaster, a red cabbage plant, which measures 13 ft. in circumference. (*Lancaster Herald,* July 30. 1831.)

A remarkable Specimen of Mimòsa pudica, or Humble Plant. — Sir, I am aware that many may think it ridiculous to say any thing on this subject; but I do not think any one will who has taken like pains with myself to bring the plant to a tolerable state of perfection. Many people are satisfied with this plant if they can grow it 1 ft. high, with a few leaves, just sufficient to show those who have never seen them that they close and drop on being touched. If this be all that is to be expected from it, it is not worth growing, as it is not, in this state, an object of beauty; and as most ladies and gentlemen are aware of its falling when touched, it is thought but little of. But when grown to a good size it is a beautiful thing; and it also looks much more curious to see branches of 2 ft. in length falling down round the plant, than merely a few leaves. Those who have nothing more than a green-house, as far as I am acquainted with it, I should think, could not obtain one so large and so full of flowers as the one I am about to describe; but those who can command from 50° to 60° heat through the winter may. My plant was raised last summer in a frame; and, after remaining in a green-house till the nights became too cold, it was removed to a pit of the above heat till about January, when it was put into a cucumber frame, where it remained as long as there was room for it; I pinching the tops of the shoots off, to prevent their touching the glass. I then removed it, after shifting into a large flower-pot, to a house of about 70° heat, where it is at this moment in full flower, and forms a bush upwards of 3 ft. in diameter. It has several times this summer had upwards of 100 heads of flower-buds and flowers on it at once. I am, Sir, yours, &c. — *R. T. May* 27. 1831.

Mimòsa pudica, called the humble plant from its timidly shrinking from the touch, not unfrequently receives the appellation of "the sensitive plant;" and very sensitive it is, even more so than the true sensitive plant, Mimòsa sensitiva; a figure of which may be seen at table 25. of the *Botanical Register;* it and M. pudica, which is also figured in the *Botanical Register,* t. 941., are remarkably dissimilar plants. — *J. D.*

The Tea Shrub [Thèa *viridis*]. — This shrub has been tried in Breconshire, not far from the source of the Usk, about 1000 ft. above the level of the sea, and found not only to endure the last winter, and the severe frost of the 9th of May, but to make vigorous shoots. (*S. Rootsey, in Plymouth and Devonport Journal,* July 28. 1831.)

Large Seedling Pelargonium. — One raised by me, in 1828, from the Waterloo, is now 5 ft. 10 in. high, and the stem within 5 ft. from the ground is 3½ in. in circumference. One branch contains eighty-five bunches of flowers, all out at the same time, and another nearly as many. — *A Subscriber. Northampton, Sept.* 1831.

The Esperione Grape. — This grape, which Mr. Plimley has found reason to believe the same as the black muscadine (see, however, p. 688.), has arrived at a very high degree of perfection, in the open air, in the forcing-grounds at Kensington Gardens. One plant, on an eastern aspect, has a most abundant crop, perfectly ripened. Mr. Plimley strongly recommends this grape for culture against dwelling-houses, on cottage roofs, or against common walls, either for eating or making wine. No variety is more hardy, or a greater bearer. The grizzly Frontignac has also ripened with Mr. Plimley on a south wall. We regret, for Mr. Plimley's sake, to observe the ruinous state of the forcing-houses and pits in this garden; but let us hope for better times. — *Cond.*

Prolific Peach Trees. — Four peach trees, in the Rev. W. Wharton's garden, at Gilling, near Richmond, Yorkshire, under the care of Mr. Bainbridge, produced this year upwards of one hundred dozen of fine well-swelled peaches. (*Country Times*, Oct. 3. 1831.)

Prolific Fig Tree. — One hundred and twelve dozen of ripe figs, of the blue Ischia variety, were gathered this season from a tree in the garden of Lord Say and Sele, at Belvidere, in Kent. — *W. P. Kensington, Oct.* 1831.

French Crab Apple. — Some fruit of crop 1830 have been sent us by the Misses Perry of Stroud House, this 5th of October, as fresh and plump as when gathered from the tree twelve months ago. They were preserved in dry fern packed in a box. — *Cond.*

Heaviest Gooseberries in Lancashire in 1831. — In p. 226. you have given an account of the heaviest gooseberries grown in 1830. I now send you an account of the heaviest grown in 1831. I have selected four of the heaviest in each colour.

Reds. The Lion, 27 dwts. 6 grs.; Squire Hammond, 26 dwts. 6 grs.; Royal George, 26 dwts. 21 grs.; Young Wonderful, 26 dwts. 1 gr.

Yellows. The Leader, 26 dwts. 17 grs. (This berry made its first appearance in 1826, and was raised by Mr. W. Piggott of Congleton; it weighed 14 dwts. 12 grs. It weighed, in 1827, 16 dwts. 18 grs.; in 1829, 22 dwts. 17 grs.; in 1830, 24 dwts. 18 grs.) Teazer, 24 dwts. 15 grs.; Gunner, 23 dwts. 14 grs.; Rockwood, 22 dwts. 11 grs.

Greens. The Peacock, 23 dwts. 15 grs.; Providence, 22 dwts.; Angler, 19 dwts. 21 grs.; Favourite, 19 dwts. 6 grs.

Whites. The Eagle, 25 dwts. 18 grs.; Ostrich, 22 dwts.; Delamere, 22 dwts. 6 grs.; and Fleur de Lis, 21 dwts. 6 grs.

There are nine new seedlings of reds, two of yellows, five of greens, and six of whites coming out this year. The advantage that may be derived from publishing the above list is, that it may be seen which is the leading sort each year. The following are the sorts which I have added to my collection this year; viz. the Squire Hammond, *r*; Teazer, *y*; Leader, *y*; Peacock, *g*; Providence, *g*; Ostrich, *w*; Fleur de Lis, *w*; being the leading sorts. — *M. Saul. Sulyard Street, Lancaster, Oct.* 1831.

Extraordinarily large Cauliflower. — In the beginning of April, 1830, I sowed the seeds, and in the last week in May I transplanted the plants; some into rather light soil, others into pure rotten dung and clay. It is to one from the latter I particularly allude. Though the whole of the latter were a good crop, the former clubbed exceedingly, and scarcely flowered. The dimensions of this plant were as follows: — Circumference, 1 yard, 2 in. and nearly 15 in. in diameter; and, when fit for dressing, it weighed 9¼ lbs. The size of this plant I attribute to nothing but the soil, as the treatment I adopted was nothing out of the common. I am, Sir, yours, &c. — *T. Lloyd. Gardener to H. S. Montague, Esq., Thurlow Lodge, Larkhall Lane, Clapham, June* 2. 1831.

Large Onion. — One grown in the garden of Mr. Morgan of Oswestry was drawn last week, measuring upwards of 19 in. in circumference, and weighing 3 lbs. 1 oz. In the same garden a small quantity of Cobbett's corn has ripened; and six or seven heads, each weighing from 3 to 6 oz., are found on each stalk. (*Cambrian*, Oct. 1. 1831.)

Large Beet. — A root of red beet was taken up in a gentleman's garden, near Carlisle, a few days ago, which weighed 9¾ lbs., and measured upwards of 19 in. in circumference. (*Country Times*, Sept. 5.)

Large Turnip. — A white turnip, weighing 9 lbs. 6 oz., and measuring 2 ft. 7 in. in girth, was gathered by Mr. William Shaw, gardener, from the garden of Mr. Youle, in the Fishpond. (*Nottingham Review,* Aug. 1831.)

SCOTLAND.

Places in the Neighbourhood of St. Andrew's.—The Priory. Sir, I now send you the plan of the Priory garden (*fig.* 119.), which I promised you in my last, but I must say it is with reluctance, as I think you will at once pronounce it unworthy of a place in the Gardener's Magazine. However, you must exercise your own discretion as to that, as I send it to you as it really is, with the exception of *d,* which is now all trees, but which is proposed to be altered as represented. This garden is situated at the east end of the South Street of St. Andrew's, in that part of the Priory called the Cloister. A fine view of the bay of St. Andrew's, as well as of the adjacent country, is obtained from the mansion-house. The garden was made about twenty-four years ago, and, as you will perceive, is small and contracted, although I believe it impossible to alter it to any advantage. The whole occupies a

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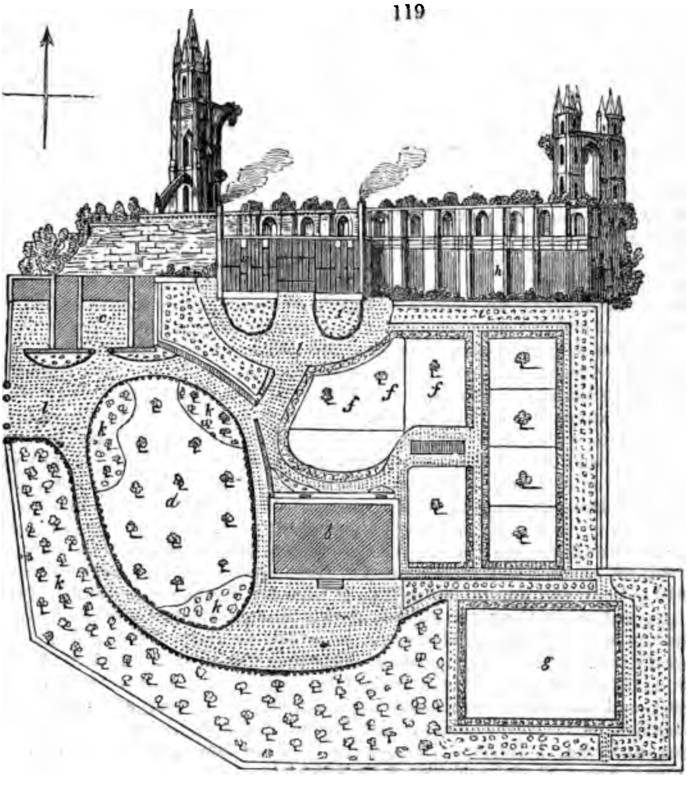


a, Hot-houses and green-houses. *b,* Mansion-house. *c,* Stables and coach-yard. *d,* Pleasure-ground. *e,* Melon-pit. *f, g,* Cropping ground. *h,* Cathedral wall. *i,* Flower-border. *k,* Shrubberies. *l,* Gravel walks.

space of about 1½ acre, Scotch measure; the soil is of a light black nature, on a sandy subsoil. The northern part of it is quite level, and is divided from the southern by a wall and hedge, the surface of which is of a considerable height, and forms a kind of terrace, from which a fine view of the ruins of the cathedral, tower, &c., is obtained. There are two very good vine-houses, each 27 ft. by 20 ft., containing several sorts of grapes of the smaller kinds, the Black Hamburgh being the only large and late grape in both houses, which shows a great want of judgment in those who selected them: neither has a border been prepared for the roots, which are left to grow in the natural soil of the garden, though it is far too light for the vine, and consequently neither the berries nor the bunches of any of the sorts attain their ordinary size. There is also a small green-house, situated between the two vine-houses, which contains a good collection of plants, consisting of amaryllis, eucomis, leucodendrons, magnolias, neriums, camellias, myrtles, richardias, pelargoniums, &c. A fine specimen of Passiflòra cærùlea is growing in a corner of the house, the stem of which measures 8 in. in circumference at the base. This is a badly constructed green-house, and plants are with great difficulty preserved in it through the winter months. There is also a melon-pit placed about the centre of the northern garden, without any thing to screen it from the winds (which are very severe in the spring months from off the sea), and without any means of heating it after the bed is made; while, to make bad worse, the mansion-house shades it till the month of April. The wall trees are trained in the horizontal and fan manners, and consist chiefly of pears, mixed with a few peaches and apricots, &c. The shrubbery is wholly composed of deciduous trees and shrubs, and has a very bare appearance in winter. The fruit-tree border is taken up with herbaceous and bulbous plants, roses, and some fine specimens of *L*aùrus nóbilis. The weeds in this garden have been allowed to seed for several years, consequently they come up in great numbers, and it will take many years before the seed can be all got out of the ground again. I can but just say I keep it at the economic point. Few gardens can boast of such a venerable-looking wall as this, and I have made an attempt to show it at the top of the plan. This is the south side of the cathedral, once a magnificent edifice, but of which this wall and three towers only now remain; two of these are on the east gable (which is still entire), and one on the west. The towers were each one hundred feet high, and, when the cathedral was entire, rose considerably above the roof. In the wall are ten windows, six of which (namely, those towards the west) are pointed Gothic, and the other four Saxon Gothic. The style of building on the west gable is much more rich and ornamented than on the east, and the turret still remaining on that side is very superior in the richness of its workmanship. Hoping soon to have something more to communicate, I remain yours, &c. — *William Smith, Gardener to John Small, Esq. St. Andrew's, May* 12. 1831.

The Priory, near St. Andrew's, according to Mr. Cruickshanks, is a neat little place, situated between the town and the sea, and immediately attached to the town. It is the seat of Lyon Campbell, Esq., but is at present let to John Small, Esq.; Mr. Campbell being a young man lately come of age, and not having as yet taken possession of the place. It was very tastefully laid out by Mr. Campbell's father (the late General Campbell), and, being limited in extent, consists principally of pleasure-grounds. However, there is a small kitchen-garden, and one of the old walls of the cathedral, still standing, forms its north wall; against which there are two very good vineries, with a small green-house between them. There is also a range of melon-pits, built with stone, and without any linings.

St. Leonard's is almost adjoining the Priory. It was lately purchased by Major Playfair, and is a fine old place, but has been much out of order for some time back; there are two old vineries which are greatly out of repair. Mr. Henderson, who is now nurseryman at Brechin, was some time gardener there with Colonel Duncan; at which time it was kept in the best order. There is a small stream of water which, runs through the garden in front of the forcing-houses, with sloping grass banks, and looks very well in summer.

Abbey Park is still in the suburbs of St. Andrew's, and is the seat of Colonel Glass. There are between two and three acres of garden ground, in which there are three forcing-houses, a green-house, and a range of melon-pits; the sashes of the pits are of cast iron, and in other respects they are the same as those at the Priory. I have seen regularly as good crops of grapes there as at any place in this quarter, under the management of Mr. W. Fletcher, who has been gardener there for a long period.

Denbrae, the seat of David Wemyss, Esq., lies about two or three miles south-west from St. Andrew's. The house and garden are both new, at least they are not more than sixteen or eighteen years old; and the garden is placed in a very romantic situation, being on the south slope of a very steep bank. A terrace-wall runs through the middle of the garden, from east to west, on which are some very good peach trees that generally are made to bear good crops by being covered with Osnaburgh [canvass], screens when in flower; the screens letting up and down with great ease by pulleys placed in a frame. This wall is 18 ft. high from the lower side, though it only forms a parapet wall of about 3 ft. high for the upper garden. This place was planned by Mr. E. Sang of Kirkaldy; and Mr. John M'Leod has been gardener there since it was first made. There are some fine thriving young plantations along the Den on both sides of the garden.

Mount Melville lies to the south of Denbrae, and is the seat of John White Melville, Esq. The place was formerly called Craigton. When Mr. Melville came of age, he built a handsome addition to the mansion-house, and greatly embellished the pleasure-grounds. These alterations were mostly done under the superintendence of the late Mr. John Nicol, gardener, who died there in 1824. There is a very good new garden going on at present, in which it is intended to have five or six divisions of forcing-houses; and there are two good pine-pits, put up some years ago in the frame-ground to the north of the garden, though they are on the old plan. The soil at Mount Melville, as well as at Denbrae, is a strong clay. A field lies between the garden and the house, with an easy inclination to the south, which it has been proposed to make into a flower-garden, and to have a conservatory in the middle of. This place has, beyond all dispute, the finest pleasure-ground in all the neighbourhood; and on laying out the ground after the house was finished, there being a large tree or two wanted in the lawn to produce a good effect, Mr. Nicol determined on trying to transplant a very large one. For this purpose he had a sledge made, and prepared a large sycamore with a very bushy head, which he fixed safely into the place intended for it, and thus produced the desired effect at once, the experiment being attended with complete success.

Strathlyrum, the seat of Mrs. Cheape, is situated about a mile from St. Andrew's, on the left side of the road to Cupar in Fifeshire. At the death of Mrs. Cheape, it falls to George Cheape, Esq., of Welfield, her brother-in-law. It is a well kept place, and a pleasant residence in summer. There are about 120 acres of ground, enclosed by a wall from 8 to 9 ft. high, and about 2 acres in the kitchen-garden; with two good old vineries, repaired in 1822; one peach-house, put up in 1824; and a range of Alderstone melon-pits (*Encyc. of Gard.*, § 1549.), put up in 1828. The soil is very light and sandy, and it is even said that the sea flowed over the very spot not more than ninety years ago: however, with plenty of manure, very good crops are raised from it. In 1826 there was a small flower-garden made, and a good green-house erected in it; the whole being enclosed with a very light, neat, and substantial iron railing. This place commands a fine view of the German Ocean from the house, as also of the coast of Angusshire, and the ruins of the cathedral of St. Andrew's. I was four years gardener there; and some plants of *Acàcia armàta*, *A.* longifòlia, and *A.* lophántha, which I planted in April, 1826, in two small conservatory plots in the green-house, were up to the ridge-board of the house, which was glass all round, and 14½ ft. high in 1828, and completely covered the whole with their fine yellow flowers, particularly *A.* armàta and *A.* longifòlia: they were between 3 and 4 ft. high when I had them from Dickson and Co.'s nursery, Leith Walk.—*James Cruickshanks. North Berwick Lodge, May* 6. 1831.

Lime-water for destroying Worms. — The use of lime-water for destroying worms was lately discovered, in a garden near Edinburgh, by the overflowing of a brook strongly impregnated with alkali from the refuse lime of the gas-works. Wherever the soil of the garden was reached by this water, it threw up myriads of worms, which never returned again to their holes. — (*Scotsman*, Oct. 5. 1831.)

Large Onion. — An onion, weighing 1 lb. 5 oz. and measuring 16½ in. in circumference, was lately pulled by Mr. William Ramsay, market-gardener, Chancelot, near Edinburgh. (*Scotsman*, Oct. 5. 1831.)

Rhubarb. — The culture of tart rhubarb has increased so rapidly about Edinburgh, that one grower for the market, who a few years ago found great difficulty in selling forty or fifty dozens of bunches of stalks in a morning, now sells from three to four hundred dozens of bunches. The common price of tart rhubarb in the Edinburgh market is 2*d.* a bunch of a dozen stalks, while in Glasgow the same quantity brings 3*d.* (*Scotsman*, May 14.)

IRELAND.

The Arboricultural Society beg leave to call attention to the following statement: — They have reduced the annual subscription to one guinea, and the life subscription to ten guineas, which they hope will not be considered too much to ask from any person at all interested in the improvement of Ireland, for the support of even an experiment, which has been honoured with so respectable a patronage; but they can hardly call that an experiment which has succeeded in other countries. Since the opening of the office in March last, there has been abundant proof received of the advantages which might be derived from the exertions of the Society, should they be enabled to continue them. Surely no one will deny the importance of affording to the cultivator of wood the same advantages which the agriculturist has derived from the establishment of similar institutions; enabling him to collect facts and the results of experiments, and then deduce general principles, by which some degree of certainty may be attained, as to the means of reaping the greatest profit from the smallest outlay, and to diffuse, as widely as possible, the result of such scientific enquiries. (*Signed, C. W. Hamilton, Hon. Sec.* 90. *Abbey Street, Dublin.*)

Gentlemen's Seats in the County of Waterford. — The finest residence in this county is *Curraghmore*, the beautiful seat of the Marquess of Waterford (about 10 miles from the city); the demesne is of great extent, and not surpassed, if equalled, by any in Ireland, in natural beauties and high keeping. The gardens, which are also extensive (12 acres), are now being improved and renovated by the very clever gardener, Mr. Alexander Johnstone.

Mount Congreve, the seat of John Congreve, Esq., is also well worth noting. The house is finely situated on the river Suir; the gardens are respectable, and have a fine range of glass.

In the west of the county, towards Lismore, are some fine places, particularly *Dromana*, the seat of Henry Villiers Stuart, Esq. M.P. *Ballysaggart*, the seat of Arthur Keily, Esq.; *Glencairn Abbey*, the seat of Henry A. Bushe, Esq.; and *Lismore Castle*, which, with vast estates in this county, is the property of the Duke of Devonshire. This magnificent castle (now occupied by His Grace's agent) stands on a rock overhanging the beautiful river Blackwater; it was some years since greatly improved and repaired by its noble proprietor, and is justly celebrated as one of the greatest ornaments to this part of the kingdom. *Kilmanahan Castle*, the residence of Colonel Greene, near the borders of the county Tipperary, is well worth mentioning, as are a great many others in different parts of the county; but, as I believe you only wish to know the principal ones, those I have enumerated may suffice. There is an extensive nursery in Waterford by Fennessy and Son. I am, Sir, yours, &c. — *Waterfordiensis. Waterford, Dec.* 28. 1830.

Temperature at Kilkenny. — The winter here has, as usual, been much milder than yours; the lowest degree of Fahrenheit was, on the 31st of January, 21°. I perceive that on the same day, near London, it was 17°; and on the 3d of February, 10°. The Photínia serrulàta and Pittósporum *Tobìra* have been much injured in the tops; while the O'lea excélsa, in the same situation, is not in the smallest degree affected. — *J. R. Kilkenny, March*, 1831.

Large Cockscombs. — Sir, In your Magazine (Vol. IV. p. 351.), I find a description of a very fine specimen of the Celòsia, grown at E. Everard, Esq.'s, Middleton, Norfolk, by Mr. Howes. Its dimensions appear, in a corrected account of the flower in Vol. V. p. 98., to be as follows: — From the mould to the top of the flower, 19 in.; length of the crest, 22 in.; and breadth of the crest, 10½ in. The description, I confess, surprised as well as pleased me, as I had about four dozen in progress; and from the method I had adopted in their cultivation, I flattered myself that some of them might, perhaps, come near the one described. My expectations have been fully realised; and, out of about two dozen, I could scarcely make a selection as to superiority. I however pitched on one, which I presented to a gentleman who devotes much of his time to horticultural pursuits, and whose letter, annexed, acknowledges the receipt thereof. The dimensions of this flower are: — From the mould to the summit of the crest, 22 in.; length of the crest of the flower, 23 in.; and breadth of the crest, 11 in.: all the dimensions taken without straining the flower in the least. The convolutions of the flower were as compact as any I have seen of a smaller description, and the colour was of the richest deep crimson. From the progressive improvements I have made annually in this species, under a peculiar mode of treatment, I have little doubt that I shall be enabled hereafter to communicate further progress; which, if I succeed, I shall not fail to do, as well as to state my mode of treatment. [We shall be happy to receive these statements.] I am, Sir, yours, &c. — *John Haycroft. Doneraile, Aug.* 28. 1831.

The letter alluded to is as follows: —

"Cork, Aug. 24. 1831.

"Sir, — I thank you for the splendid specimen of the Celòsia, or cockscomb, you were so kind as to send me: it far surpasses any thing of the kind I ever saw, not only in size but in the perfection of the flower. I find, on measuring it, that it is very nearly 2 ft. in length, and over 11 in. in breadth; height from the earth to the top of the flower, 23 in.

"I am, Sir, yours, &c.

"J. Dillon Croker.

"*To Mr. John Haycroft, Doneraile.*"

Art. IV. *Calls at the Nurseries and Suburban Gardens.*

As soon as the afflicting circumstance which recalled us suddenly from our tour would permit, we began to visit the principal London nurseries and suburban gardens, to see if any thing remarkable had taken place during our five months' absence. We cannot say that we found much change. Kewley's mode of heating by hot water is spreading rapidly. The mowing-machine (noticed p. 611.) will be found, when known, an important accession to garden implements. In almost every nursery the georginas are splendid to a degree never before observed since the plant was introduced. The finest display we saw, we think, was in Dennis's New Nursery, King's Road; at Messrs. Rollisson's, Tooting; and at the Epsom Nursery. We were rather disappointed in finding many of the autumn species of aster prematurely in bloom, and even beginning to decay; the cause being the uncommon mildness of the autumn. Without the georginas, there would have been few flowers in the open air this November, because the chrysanthemum, which has succeeded so ill out of doors during the last three or four seasons, has now ceased to be much planted or cared for. The best collections in pots appeared to us to be those of Mr. Lee and Mr. Henderson.

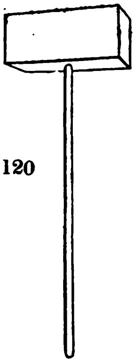
With respect to house plants, we found those of the green-house decidedly better grown than usual; from the same cause, the past season. The winter-flowering heaths are coming finely into bloom, and the camellias are covered with blossom buds, which, in the white and some other sorts, are beginning to expand into flowers. The frequent rains during October have been favourable to the production of weeds; and this circumstance, with the others attendant on the approach of winter, prevents gardens, even under the best management, from displaying that high order and keeping which they do in the beginning of summer. Upon the whole, however, the keeping of the London nurseries this autumn may be designated as highly respectable. Garden seeds, with the exception of peas and onions, have ripened well this season. The young wood of fruit and timber trees and shrubs is also plump and mature; and we never saw the nurseries better stocked with saleable articles of every kind.

Harrow Road Nursery. — *Oct.* 20. This new establishment displays a good dwelling-house and two spacious green-houses, one at each end; the gable ends to the road, and the fronts to the east and west. The greater part of the grounds is now covered with dwarf georginas in the very height of their beauty.

Westbourne Green Nursery. — *Oct.* 20. This also is a new establishment, combining a tea-garden, a labyrinth of hornbeam hedges, and a good collection of pelargoniums.

The Enham Nursery, Mr. Russell. — *Oct.* 22. A splendid display of georginas, with some phloxes, asters, liatrises, and other autumnal flowers; the whole in good order.

Tooting Nursery, Messrs. Rollisson. — *Oct.* 22. The display of georginas is finer than has ever been known. The salvias are also very fine, particularly *S.* Grahàm*i*. Part of a wall is covered with Ipomœ`a coccínea, nailed close to the wall, in order that it may ripen its seeds. *St*àtice sinuàta, an old neglected plant, is very finely in bloom. *O'*xalis Bów*ii*, one of the finest species of the genus, and also several other very ornamental species, are in flower in a narrow border close under the front glass of a green-house. In the stove, Cypripèdium insígne has eleven flowers, all expanded, and is a very splendid specimen. Messrs. Rollisson are attempting to flower Pontedèr*ia* cràssipes by growing it out of the water in moist soil. The heaths and other green-house plants are newly replaced under glass, and the former are about to be repotted, the soil being supposed to be a



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good deal exhausted by the summer sun and rains. The most perfect order and neatness reign as usual in the green-house. A description of tally not in general use has been lately adopted here. The plate on which the name is written is of wood, 2½ in. long, 1¼ in. broad, and about a quarter of an inch thick. In this a piece of wire or iron rod, about three sixteenths of an inch thick, is inserted as a shank; and, while the board is painted white, the shank is black. (*fig.* 120.) They are perhaps rather clumsy, especially for plants in pots, but the writing will be more durable than on metallic tallies.

The Epsom Nursery, Messrs. Young. — *Oct.* 22. The georginas here, as every where, are splendid beyond all former example. *A*nagỳris índica *Wal.*, Piptánthus nepalénsis *Swt.* (Thermópsis *l*aburnifòlia *D. Don*), is covered with ripe seeds, like a common laburnum; and it will not be the fault of the plant, or of Messrs. Young, if the one tree is not soon as common as the other: it ought to be on every lawn. Our country readers will be happy to learn that we have engaged our esteemed correspondent Alpha to resume his lists, which, notwithstanding the senseless venom of Aristides (Vol. VI. p. 357.), we found, during our late tour, highly valued in every part of the country where they were mentioned: indeed, some of the principal botanical nurserymen and amateur collectors, such as Messrs. Pope, Dicksons of Chester, Skirving, Smith and Sons, Goldie, Mr. Woodhouse of Crosslee Cottage, and many others, told us that they had been in the habit of considering them among the most valuable parts of the Magazine. We might notice many things that we saw here, if we had time and room; but we trust every thing to Alpha, who will do it better than we can. One point is worth hinting at, viz. a plan for rendering ixias and many other Cape bulbs available as common border flowers, and of as easy culture as crocuses.

Westland's Nursery, Dorking. — *Oct.* 23. The georginas here are beautifully arranged along a border, against a high hornbeam hedge; the tallest sorts being in a row next the hedge, and the dwarfer in regular gradation to the front. This mode, and that of forming circular masses with the highest sorts in the centre and the lowest at the edges, are undoubtedly the best for making a splendid display in a mass, as a single row along a walk is the best for displaying individual beauty. Mr. Westland has lately heated two hot-houses by hot water in Kewley's manner; and we must do him the justice to say that he is almost the only person we have met with who thoroughly and clearly understands the advantages which Kewley's system has over all the other modes of heating, viz. the rapidity of motion in the water, and the extraction and delivery to the house of the greatest quantity of heat from a given quantity of fuel. On the latter point we have already spoken (Vol. VI. p. 377.). Mr. Westland was convinced of the saving of heat, by finding that the temperature of the water was never raised high enough to generate steam; and, in short, that he could always bear his naked hand in it without the slightest inconvenience; consequently, that the smoke and heated air which passed into the atmosphere by the chimney top never required to be so hot, and therefore could not carry off so much heat as when the water was either boiling or very nearly so. To convince himself of the greater rapidity of the motion of the water by Kewley's mode, he had two tin models made (*fig.* 121. *a b*). Each model consisted of a round tin vessel (*c d*), in imitation of the boiler. For the one he had made a siphon of tinned iron tube of several feet in length (*e*), and, for the other, two tubes of the same size and length, for heating the water on a perfect level (*f*). He next took out the siphon (*e*), reversed it, and filled it with cold water, stopping the two orifices with corks. The tube *f*, which was calculated to hold exactly the same quantity of water, was filled and corked in like manner. Arrangements being then made for two persons to take out the four corks at the same instant of time, both vessels were filled with water at a temperature of 150° at the same moment, and the four corks were immediately taken out; Mr. Westland standing at *g*, with one hand on *e*, and the other on *f*. The heat arrived much sooner at *e* than at *f*, and continued hotter for a greater length of time. The circulation of both apparatus was allowed to go on till the water in both vessels was cooled down to 60°, and it was found that the water in *e* was much sooner cooled down to that temperature than the water in *d*; we shall not say how much sooner, because we wish this experiment to be tried by Messrs. Cottam, Messrs. Walker, Messrs. Bailey, Mr. John Jones of Birmingham, and other tradesmen, that are in the habit of heating by hot water according to the ordinary modes. Mr. Westland having thus convinced himself that Mr. Kewley's mode was superior to all others hitherto brought into notice, in the two respects above mentioned, had only to ascertain whether it was practicable to make the joints of the siphon water-tight at a moderate expense, and to draw off the air which necessarily generates in the water, and rises to the highest point in the tubes. The first point he was assured of by Mr. Kewley, who employs a cement in general use among ironmongers; but the composition is mixed up by them in proportions which very shortly give way, and leave a leaky joint. The second point, it is well known to all who have seen Mr. Kewley's apparatus, as put up at Mr. Colvill's, is effected in the most complete manner by an air-pump. As to the expense of Mr. Kewley's system, the general price is 7*s.* per foot of pipe, which includes the boiler, air-pump, carriage, putting up, and all other expenses whatever. In extra-cases, 8*s.* per foot is charged, but seldom or never more. Perhaps it may be thought that we have some interest in recommending Mr. Kewley's mode of heating. Quite the contrary. We have been on terms of friendship with Mr. Kewley for a dozen years past, and we know it to be his policy to keep all his plans as much a secret as possible. We have given this notice of his mode at the risk of giving him offence, simply because we conceive it to be our duty, as Conductor of the Gardener's Magazine, to make our readers fully aware of the advantages of that plan which we consider to be the best. Let no one, however, attempt Kewley's plan who cannot make water-tight joints. (See p. 376., and Vol. V. p. 543.)

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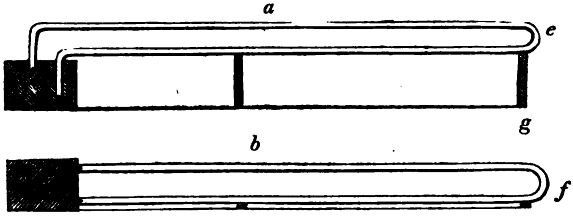

Sprateley's Nursery, and Bradley's Nursery, both at Dorking, are worth looking at; and they add to the beauty and interest of this most delightful neighbourhood.

Goldworth Nursery, Mr. Donald. — *Oct.* 24. The arboretum is doing well: there have been very few deaths; and, considering that many of the plants were put in the ground in May, they have made surprising shoots. The changing colour of the foliage of the American oaks, particularly aquática, palústris, and tinctòria, is now rich and beautiful in an extreme degree. In another half century, such colours will be common in all our plantations. For autumnal colour the oak is beyond all other trees. No gentleman ought to plant fewer than thirty species, even if he should send to America for them; but Mr. Donald will soon have more than this number of sorts budded or grafted on the common oak. We trust that Mr. Donald's friends and ours, in every part of the country, will send to Mr. Donald whatever species or varieties they may have which they think will add to the value of his collection; and we are sure that they will not find him tardy or niggardly in making a return.

The Addlestone Nursery, Mr. Cree. — *Oct.* 27. Every thing here is as neat and orderly as usual, and the georginas are not less splendid than they are in the other nurseries which we have seen. *C*áctus *O*púntia, which had suffered during last winter, has recovered its vigour in this its thirty-second summer. The roots of all the species of Fúchs*ia* in the same border, which passed the winter under the protection of some fern leaves, have sent up shoots in the course of the summer, which are now covered with flowers.

The Hammersmith Nursery, Messrs. Lee. — *Oct.* 29. The show of chrysanthemums is here superior to what we have elsewhere seen this season. The plants are from cuttings struck in very small pots in the beginning of June, and afterwards shifted repeatedly in the manner of balsams, and kept in a sunny exposed situation in the open air till the beginning of October, when they were housed. They now form short stocky plants, of a single stem each, covered with leaves, and dividing, at from 6 in. to 10 in. from the surface of the pot, into three branches of flowers, which are now beginning to expand. The collection includes forty-five varieties.

The Chiswick Garden. — The trees in the arboretum are shedding their leaves, with very little discoloration to what takes place in dry autumns. Among the exotics which have stood the winter with slight protection is a very fine plant of *A*càcia dealbàta? which has made shoots 6 ft. long. There has been a very poor crop of every description of fruit, and there are scarcely any apples, and very few pears, in the fruit room. A quantity of tobacco stalks are drying, to be used in the form of powder, and dusted on the leaves of peach trees in the open air after watering. This Mr. Thompson considers by far the best manner of applying tobacco to the leaves of trees. The particles adhere for several days, and with every dewy evening or slight shower give out part of their juice. The en quenouille pear trees are beautifully covered with shoots full of blossom buds. The peach tree trained as a specimen of Seymour's method (Vols. I. p. 128., II. p. 295., VI. p. 436.) already covers a space 30 ft. in length. Mr. Thompson, as we have before observed, considers this mode decidedly the best for peaches and nectarines, and we are therefore very desirous of repeating our recommendations of it. It is the only decidedly scientific method that has ever been proposed, because there is a specific reason for the position of every branch and shoot of which the tree may consist. Unfortunately this specimen peach tree is on a peach stock, so that it will not last very long. Almond stocks last longer, but plum stocks longest.

Botanic Garden, Kew.— The present king has given directions for enlarging the arboretum, by the addition of several acres hitherto connected with the private garden of the palace, but which will in future be thrown open to the public, and sprinkled over with additional species. It is highly gratifying to us thus to find that our excellent king is as good a gardener as he is a magistrate. We wish he would order two or three acres to be covered with span roofs, like those of Whitbread's brewery, but with glass instead of tiles, and thus show his subjects what palms are capable of becoming when they have room. A considerable addition to the Australian plants has lately been brought home in excellent condition by Mr. Cunningham. Among these is a shrub or tree evidently belonging to Aurántiæ, and another which may probably turn out a Quércus. One of the Leguminòsæ, named *Castanospérmum austràle, has a fruit remarkably like a chestnut, which is eaten by the natives, and forms one of the very few edible fruits furnished by nature in a part of the world where in the open air, and with common culture, are produced the fruits of every other region. But we shall have more to say on this subject, when we review the last number of Dr. Hooker's *Botanical Miscellany*. Among innumerable curious and interesting plants, we shall only notice the fine specimen of Bánks*ia* rèpens, which Labillardière took for a fern, as did Linnæus the *A*càcia decípiens. The slightest knowledge of the anatomical difference between the Dicotyledoneæ and the Acotyledoneæ, such as any person, even though he may never have seen a plant before, may attain in five minutes, would have prevented such mistakes; but science had not advanced so far in the days of these great men. There are here two plants, 4 ft. high, of the St. Vincent bread-fruit tree. Mr. Smith finds this variety much hardier than that from Trinidad. From the latter island he has had many plants, but has never been able to keep one of them for any length of time; from the former he has had only the two now in the gardens, which are both growing vigorously. The collection of ferns is here greatly increased, Mr. Smith having been very successful in raising plants from the seeds of dried specimens. There is not a better class for a small hothouse, not over light, and where much attention cannot be paid to the plants, than ferns; because, with very little heat and care, and a good deal of water, which lady gardeners are generally very fond of supplying their plants with, they will look green and well all the year. Among various exotic plants, the hardiness of which has been proved during the last winter, the aromatic ones, it appears, are found to suffer most from the cold. This may afford a hint in attempting to acclimatise. For the last seven years it has been observed that the number of master gardeners from Scotland who have yearly visited Kew Gardens has been gradually increasing; a favourable symptom, as nothing contributes more to a man's own improvement than seeing the improvements of his neighbours.

Kitchen-Garden, Kew.— We did not find Mr. Godfrey at home; but his foreman, Mr. Anderson, showed us every part of the garden, all of which we found in a good state. As it appeared to us, the fruit tree borders are more severely cropped than they were in 1827, when we last saw them. There is still, however, a space of 6 ft. kept between the wall and the crops; but this, with due submission, we do not think above half enough. The vines in the pinery are matted up, as hinted at p. 539. Grapes were cut here last year in the last week of March. Cucumbers in one pine stove are now fit to cut, and a succession will continue during winter and spring.

Fulham Nursery, Messrs. Whitley, Brames, and Milne.—*A'*rbutus procèra, a very handsome Nepal species, Mr. Milne expects to be quite hardy; *A.* hýbrida, a very handsome species, most prolific in flowers (see Vol. V. p. 660.), he finds decidedly hardier than either of its parents, *A. U'*nedo and *A. An*dráchne. Handsome young plants of several rare species of *P*ìnus and *A'*bies raised from cuttings. Seedlings of *J*uníperus excélsa. A large stock of *Ribes* sanguíneum, plants from 2 ft. to 4 ft. high. Gaúra biénnis, an old plant, at present rather neglected, now finely in flower, and on that account valuable; also Tigrídia conchiflòra.

The Haverstock Nursery, Mr. Money. — *Oct.* 30. Tasted the fruit of Money's early Muscat grape, grown on the open wall, and found it as good as it was last year, or better: Mr. Money has above 150 plants for sale. Tasted a large, new, black seedling, which has fruited this year for the first time, and is likely to be a most valuable addition to the grapery. Money's West's St. Peter, large and excellent as before. Very large crops of the Esperione on standards in the open air, and the same of the black Muscadine, which on tasting we found to be quite distinct sorts. (See p. 677.) The leaves of the claret and of the port-wine grape very deep red coloured and rich. Mr. Money's Tokay grape has very small berries, and is quite distinct from the grape of that name which we saw in the vineries of the west of Scotland, and which was probably a variety of white Muscat. Took a bunch of a remarkably high-flavoured, small, black berried grape, from the open wall of our own garden, to Mr. Money, to ascertain its name, and found it the Zante muscat. We purchased the plant for the black Hamburg, from a nursery where there were at that time no regular stock plants from which to take cuttings.

Stanhope Nursery, Mr. Ramsay. — *Oct.* 31. This is a new establishment, forming in a very complete and scientific manner by Mr. Ramsay, who has had much experience in laying out gardens and grounds, and who has the care of some of the principal squares in the metropolis, as well as of various departments connected with the Office of Woods and Forests. When the working-sheds, green-houses, shops, and dwelling-house, now in progress, are completed, we hope to be able to give a plan of them. We regret that we did not sooner become acquainted with Mr. Ramsay, who is an enlightened, liberal, and generous-minded man. He has a scheme in contemplation for a Gardener's Benefit Society, which, if carried into execution, will effect a most important service for the profession. Mr. Ramsay has lately extended his nursery, by taking the ground at Old Brompton formerly in the possession of the celebrated Mr. Curtis. He is forming a species of representative system, to embrace only those trees, shrubs, and plants which will serve as ornaments to gardens and pleasure-grounds. Esteeming Mr. Ramsay so highly as we do, most cordially do we wish him success in all his laudable undertakings.

Gibbs's Nursery, Old Brompton. — Some improvements have been made in the arrangement of the grounds near the house, and a portion of lawn, with a new approach road, introduced with good effect. The grasses are taken up with a view of renewing the grass garden in a superior style, and further alterations are in contemplation. The trained fruit trees in this nursery are most excellent; and, as we have formerly observed, Mr. Gibbs is a connoisseur in apples, and possesses all the new sorts of Flemish pears.

Kirke's Nursery, Old Brompton. — The wall of muscadines, which, in good seasons, produces upwards of two tons of fruit, this year had hardly any. The leaves of the claret grape, and of the black muscadine, are almost the only ones which have yet changed colour. It is perhaps not generally known, that the claret grape is the only one the berries of which produce a red juice. Mr. Kirke has long been celebrated for his collection of hardy fruit trees, more especially apples; but of these there are, this year, only 29 sorts which have ripened fruit. Of the best sorts, however, he has wax models; beautifully executed by Tuson, the modeller to the Horticultural Society.

Knight's Exotic Nursery, King's Road. — In the show department are some handsome vases of artificial stone, made by Falcke of Battersea; the same ingenious potter, we believe, who made the stone-ware flues formerly noticed (Vol. III. p. 480.) as in use in the Enham nursery. The young banksias, and other fine plants raised from Mr. Baxter's seeds, are in a most thriving state, and the foreman of the houses, Mr. Scott, elsewhere mentioned in terms of deserved commendation, is preparing a descriptive list of the species not included in our *Hórtus Británnicus* for the forthcoming *Supplement* to that work. The telopeas are vigorous plants, and one of them is about to flower, as it has lately done in the Epsom nursery. Mr. Scott seems remarkably successful in his treatment of the *N*epénthes distillatòria and Cephalòtus folliculàris; of the latter, Mr. Knight has the only plants in the trade. A new hot-house has lately been erected here, and heated with hot water; but details of this, and of various other matters, we must leave for a future notice; observing that Mr. Knight is fortunate in having two of the cleverest young men we believe to be in the trade: Mr. Pringle, who gained one of the prizes which we gave for the *Essay on Cottage Gardening* (see Vol.

VI. Preface, and p. 185.), as foreman of the grounds; and Mr. Scott, just mentioned, as foreman of the houses. The improved appearance of both departments already attests the superior skill and assiduity displayed in each. Nothing can be more neat and orderly than the houses and the working-sheds.

Colvill's Nursery. — The plants of the conservatory, having become too large, are removed, and their places occupied by camellias in pots, many of which are now in flower. Among the rarities in the hot-house, such as Barringtòn*ia* speciòsa, Brównea grándiceps, several new theophrastas, &c., are a number of the cow tree raised from Mr. Fanning's seeds. All the plants noticed in Vol. VI. p. 326. are dead. In the heath-house there is a very brilliant display, chiefly of the autumn-flowering variety of *E.* grácilis, colòrans, Bowie*àna*, &c. In the small propagation stove Catasètum tridentàtum, one of the most curious and beautiful of the Orchídeæ, is coming into flower. In the open air are some good phloxes, among which *P.* refléxa is considered one of the finest autumnal species. The chrysanthemums here are rather too much drawn; this family being less profitable to nurserymen, and consequently less cared for by them, than formerly. Mr. Rieth, the intelligent foreman here, informed us of the arrival of Mr. Cumming * in his own ship from South America, with one of the most extensive collections of natural history ever imported into Europe.

Dennis's New Nursery, King's Road. — The ground for this nursery was only taken possession of this spring, as noticed by us (p. 352.). Its plan is, in consequence, not yet fully developed; and the ground is but partially stocked with that general collection of showy plants which Mr. Dennis intends to cultivate here. Preparation, however, has been made for the erection of some glass structures; and a good many shrubs and perennial herbaceous plants, both in and out of pots, have already been removed from the old nursery in Grosvenor Row; and, in the interim, the new ground has been rendered attractive, and we hope profitable, by a copious crop of esculents and showy annual flowers, both cultivated for the sake of their seeds. We mentioned (p. 352.) that Mr. Dennis then contemplated occupying more than an acre this summer with georginas: this he has done on ground off which he has this year taken a crop of seed-peas, principally of the two kinds, Bishop's early dwarf and the Spanish dwarf: effecting this by sowing the peas quite early, and subsequently planting the georginas between the rows of growing peas, which latter had become ripe enough for removal by the time the georginas needed staking. The georginas are now all in bloom, and some of them, perhaps, past their best. Whatever may be urged against double flowers for their monstrosity and unnaturalness, it is impossible not to admire the gorgeous display of floral splendour (and this in colours most esteemed for their fulness and richness) which the georginas, seen in a mass as they are here, at this season display. Their value, too, is not a little enhanced by the remembrance of how few are the genera, as

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* We have since seen this gentleman's most astonishing collection, and received from him a specimen of a plant discovered by Dr. Bertero, an Italian botanist, and friend of Decandolle, resident in Chile, which he has done us the honour to name Loudòn*ia*. We should not perhaps have been the first to notice our own apotheosis, were it not that we are anxious to thank Dr. Bertero for the honour he has done us, and for having chosen, as the medium for conferring it, so very handsome a shrub. Loudònia seems to belong to Leguminòsæ *Sophòræ*, and was found on the estate of Palmas, eighteen miles from Valparaiso. Seeds of it have been distributed; and we trust it will soon become a favourite in the green-houses.

A'ster, Solidàgo, and *C*hrysánthemum, allotted to the decoration of the declining year. As new varieties of merit, we noted the following: —

Queen of the Yellows, called also Most Superb Yellow, Reine de Jaunesse; Incomparable, with blossoms densely double and brilliantly scarlet; Dennís*ii*, a beautiful quilled ruby; Scarlet Ball, very fine; Beauty of Cheshunt, a glittering scarlet; Scarlet Ranunculus, beautiful; and many other fine new kinds. From Mr. Dennis we learn that his whole stock and collection occupy here and elsewhere about three acres; and that the utmost attention is paid to keeping them correct to name.

Chelsea Botanic Garden. — Mr. Anderson, in showing us his new domestic hot-water system (p. 651.), remarked that he felt particularly gratified in thinking that it might be the means of rendering the smaller class of shopkeepers more warm and comfortable in their shops; for, as these have generally a fire in some room or kitchen behind, and either on a level with the shop or below its level, a going and returning pipe could easily be made from it to a reserve cistern behind the counter, &c. The house-plants here, just set in, never looked better. Tropæ'olum adúncum, the hooked, or Canary-bird flower, a rare species, approximating closely on T. peregrìnum, is in flower. The rare and elegant T. tricolòrum has also grown and blossomed most satisfactorily during the summer and autumn. Cósmea bipinnàta, with its orbicular rosy lilac flowers, of the size of half a crown, is highly ornamental in the green-house. In the open air, upwards of two hundred varieties of maize, supplied by Professor La Gasca, have ripened their seeds.

The Zoological Gardens, Regent's Park. — *Nov.* 1. These gardens have been greatly enlarged during the summer, and several handsome new structures erected. We have seen the mowing-machine tried; and, notwithstanding the wetness of the grass and roughness of the surface, it acted admirably well. It is clear to us that the same machine, on a large scale, would mow clover and rye-grass; and, on a still larger scale, cut corn. Whether it would equal Mr. Bell's, or one now constructing in the neighbourhood of Stirling, which we heard of when in Scotland, is a different thing.

The Mary-le-bone Nursery, Regent's Park and New Road. — Mr. Jenkins has the third best collection of chrysanthemums which we have yet seen in the nurseries. His common horse-shoe pelargoniums, owing to the mildness of the season, and having been housed some weeks, are all in flower; which must weaken the plants, without producing any advantage to the owner, as this is the worst season in all the year for the sale of such articles. The mignonette, of which Mr. Jenkins has in both nurseries a very large stock, is also running into blossom too fast; but this evil is counteracted by pinching off the points of the shoots. A stock of excellent pine-plants exists here.

Henderson's Nursery, Edgeware Road. — Every thing here is, as usual, in high order, and the plants admirably grown. A very fine show of heaths in bloom, with masses of Lechenaúlt*ia* and Cròwe*a s*alígna. An excellent stock of flowering plants of Cèreus speciosíssimus, and Epiphýllum speciòsum and truncàtum, the latter coming into bloom. A large stock of *D*áphne hýbrida, or Dauphínii, in bloom. Camellias richly covered with buds. The chrysanthemums, seen on the 14th, well grown, and equal to those in the Hammersmith nursery.

Allen's Nursery, New King's Road. — *Nov.* 3. This depôt is richly supplied with ornamental plants from the Bolingbroke Nursery at Battersea. Chrysanthemums and various showy articles are now in flower; and a plant of Cobæ'*a* scándens, trained under the glass roof, is covered with seed-pods.

Chandler and Sons' Nursery, Vauxhall Road. — The camellias never were more profusely covered with blossom buds, and the show in spring will be the most splendid which has yet been exhibited in this or perhaps in any nursery. The white and striped show expanding blossoms. C. *Sasánqua* is covered with bloom, and C. *Kissi* is, for the first time in this collection, furnished with flower buds. Among the green-house plants at present in flower, three distinct varieties of Lechenaúlti*a* formòsa raised here from seed, Cròwe*a* salígna and latifòlia, *L*òtus jacobæ'us, *A*càcia díscolor, *Técoma* capénsis, five or six species of heaths, and as many species or varieties of Pelargònium, are the principal. *Técoma* capénsis, Mr. Chandler finds to bloom most freely in a small pot, in which the plant does not grow above a foot high, and shows flowers for months. *A*càcia díscolor, from seeds and from 1 to 2 ft. high, produces a dozen or more spikes of blossom on each plant, very fragrant. There is here a good collection of chrysanthemums, some of which, in the open air against a wall, are very splendid. Owing to the mildness of the season, *R*hododéndron däùricum atrovìrens is now in bloom in this and in other nurseries, and will, with the autumn-flowering mezereon and *C*ydònia japónica, continue in flower all the winter. *R*hododéndron fràgrans, a hybrid resembling *R.* azaleöìdes, raised in this nursery a few years ago, is a low shrub, much admired on account both of its beauty and fragrance, and we are happy to observe that there is now a good stock of plants.

Surrey Zoological Gardens. — Speaking of these gardens as such, we are, on the whole, highly gratified with them. Their chief defect, at present, is a want of unity in the different scenes which come successively into view; that is, in proceeding along the walks, the different buildings and other objects, to the right and left, meet the eye with nearly equal claims to attention, and rather puzzle than delight the spectator. We call this a defect, because it may yet be remedied by planting. The object, in such a garden, ought to be, to lead the visiter to one scene after another, and to keep every scene so far distinct, either from that which has been just passed, or that which is next to come, as that its full unmingled expression shall be produced. At the same time, there ought to be just as much indicated of the coming scene as will excite curiosity and invite the stranger to proceed. The theory on this subject has been beautifully laid down by Morel and Girardin. The extent of the ground here is 15 acres, of which nearly 3 acres are in water. The whole is the property of one individual, Mr. Cross; and we must say that we cannot sufficiently commend and admire the prompt and spirited manner in which he has set about executing the different buildings requisite for the animals. The London Zoological Society has certainly the merit of taking the lead in this description of garden; but Mr. Cross has not only proceeded more rapidly than they have done, but has erected more suitable and more imposing structures than are yet to be found in the gardens in the Regent's Park. What is there, for example, in the latter garden which can be at all compared with the circular glass building of 100 ft. in diameter, combining a series of examples of tropical quadrupeds and birds, and of exotic plants? In the plan of this building (*fig.* 122. from memory), the animals (lions, tigers, leopards, &c.) are kept in separate cages or compartments (*a*) towards the centre; exterior to them is a colonnade (*b*), supporting the glazed roof, and also for cages of birds; within this colonnade will be placed hot-water pipes for heating the whole, and beyond it is an open paved area for spectators (*c*); next, there is a channel for a stream of water, intended for gold, silver and other exotic fishes (*d*); and, beyond, a border, under the front wall, for climbing plants (*e*), to be trained on wires under the roof. It is singular that the elevation of this building (*fig.* 123.) is almost a *fac simile* of the elevation which we made in May last for the hot-houses of the Birmingham Horticultural Society's garden; the only difference being, as it will afterwards appear, the addition, in our plan, of exterior pits, and of pediments over the entrance porches. The curvilineal sash-bars in Mr. Cross's building are of iron, by Brown of Clerkenwell, and the glazing is beautifully executed by Drake of the Edgeware Road.

The state of the weather prevented us from examining various details in this garden; but we shall repeat our calls from time to time. Meanwhile we invite the public to subscribe to this excellent establishment, and nurserymen and the curators of public gardens to send donations of plants. Exotic climbers and twiners, to the number of at least 100 species, may be displayed in the house above described. Specimens of iron fencing and of various garden ornaments are exhibited about the grounds by various tradesmen. It will be the interest, we should think, of Mr. Peake of Tunstall, Mr. Falcke of Battersea, Mr. Selane of the Vauxhall Road, and Mr. Jones of Lambeth, to send their vases here; Messrs. Harrison and Curtis their new mode of glazing; and Mr. Ferabee one of his mowing-ma-

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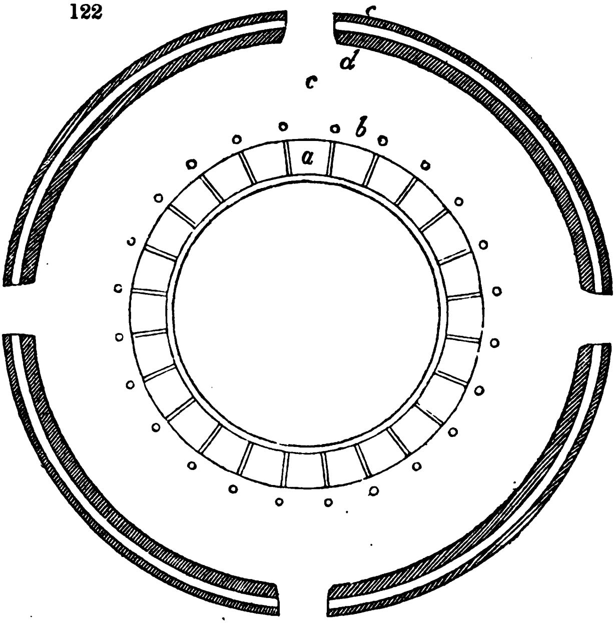

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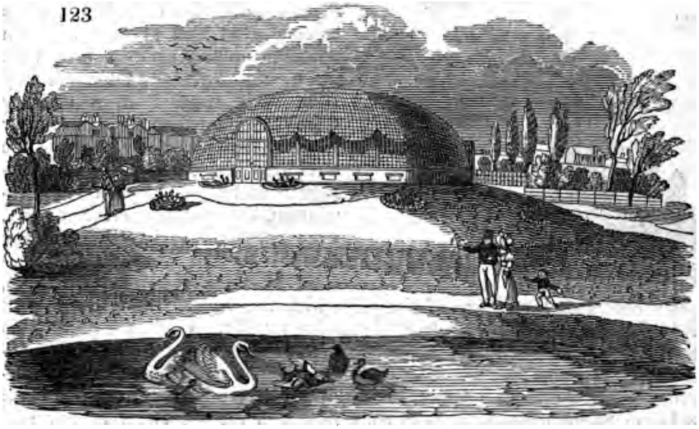
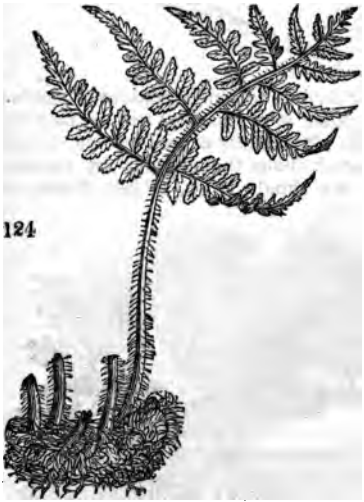


chines. These gardens are close to Groom's Florists' Garden, Walworth; and whoever goes to see the former ought to call and see the latter, more especially in the tulip and ranunculus season.

Gordon, Forsyth, and Co.'s Nursery, Mile End, is the remains of an extensive and highly respectable establishment, now, however, chiefly confined to the seed trade. In an old green-house we were pleased to find specimens of plants now neglected, but which were common about Edinburgh in the days of our youth; such as Cluý*tia* *a*laternöìdes, *C*neòrum tricóccum, Camphorósma monspelìaca, *P*hýlica *e*ricöìdes, &c.

Thompson's Nursery, Mile End, contains many fine large specimens of magnolias, stuartias, illiciums, Gymnócladus, Koelreutèr*ia*, Halès*ia*, green tea, maiden-hair tree, &c. &c., which we wonder very much no wealthy amateur thinks of purchasing. The green tea thrives in the open air here almost as well as the holly or the common laurel, and bushes, 6 ft. high and 7 or 8 ft. in diameter, are now profusely covered with bloom. A plant nearly this size was moved about a year ago, and seems to have suffered very little by the change. In the green-houses are a number of large green teas in pots, which we would strongly recommend for turning out into the open air. Half a dozen of them would make a handsome present to the Surrey Zoological Garden.

The Hackney Botanic Garden, Messrs. Loddiges. — Some alterations have been made in the arrangement of the palm house, and many of the plants have been shifted into larger boxes; the whole are in admirable health and vigour. The collection of ferns and that of *O*rchídeæ are every year increasing; the latter considerably exceeds 300 species. Some of the ferns are magnificent specimens. We shall only notice the Aspídium *Báromez,* the Scythian lamb, as it is called by Darwin and other writers. The name is said to have originated in the circumstance of its brown, hairy, creeping root-stalks being often found separated from the plant, and turned upside down, so as to be supported by the stumps of the fronds or leaves. The appearance of the plant, even in Messrs. Loddiges's collection (*fig.* 124.), gives a very good idea of how such an apparent metamorphosis may take place, and how easily the name may have been applied in a country where the lambs are small, and their wool brown and hairy. Among the *O*rchídeæ, Cymbídium sinénse, Cœlógyne fimbriàta, Cypripèdium venústum, Zygopétalum crinìtum, &c., were coming into flower. Among the palms, that most elegant species, Eutérpe globòsa (*fig.* 125.), which combines the foliage of the palm with the smooth deep green bark and jointed stem of the bamboo, is growing rapidly. Of all the palms this would be one of the best for filling the central dome of the botanic conservatory at Syon House. The camellias are full of promise. The arboretum is become quite a forest. We find we were mistaken in thinking we had seen Shephérd*ia* argéntea in fruit, as stated on the cover of our last Number: there are plants here, but they have never blossomed. There is still, therefore, abundance of room for the trees recommended by our American correspondent. (p. 570.) The autumnal foliage in this arboretum,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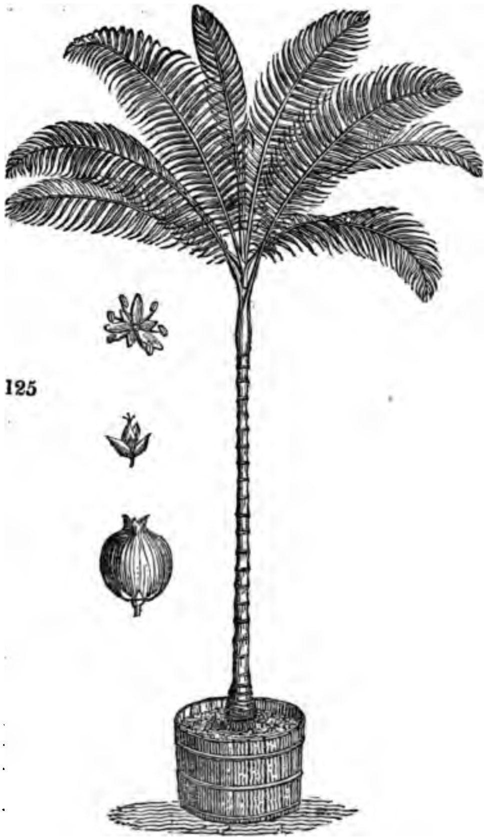

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as at the Chiswick garden and Kew, has not, we think, the same intensity of colouring as it displayed last year.

Groom's Florists' Garden, Walworth.—Nov. 4. We found Mr. Groom arranging his tulips for planting, in the manner recommended by him (Vol. II. p. 307.), and by our correspondent J. M. (Vol. VI. p. 683.). The bloom of the tulip bed last spring was finer than Mr. Groom had ever before seen it. The severe frost on the 7th of May last had nearly done much harm to the ranunculuses; but, by watering them before sunrise, the mischief was prevented. A large stock of Dutch bulbs has been imported, and found remarkably well grown this season. A good stock of *L*upìnus polyphýllus álbus, Potentílla atrosanguínea May*iàna*, choice carnations, cactuses, and various other plants. Some chrysanthemums, trained to a wall, finely in flower. Ammòbium alàtum very strong, and ripening abundance of seed. Two large agaves in tubs, well adapted for the adjoining zoological garden. *L*upìnus mutábilis has proved itself here, as in other nurseries, to be an admirable shrubbery annual. We have before (p. 366.) strongly recommended the owners of small London gardens to deal largely in Mr. Groom's early double and single tulips as border flowers, and we would now remind them of the beauty and fragrance of hyacinths in borders, and of the display made at a cheap rate by masses of crocuses and aconites. Mr. Groom has built a new camellia pit, with hollow walls, and in covering it he means to use a tarpawling over the mats or straw, in order to carry off the rain, instead of letting it sink through to the glass.

Buchanan's Nursery and Arboretum, Camberwell, are both going on well. The stock of green-house plants in pits is extensive, and in excellent condition. Here, as at the Edgeware Road Nursery, Cape heaths seem to be equally well, if not better, preserved in pits and frames without artificial heat, than in other nurseries in green-houses with flues or hot-water pipes. In the arboretum we observed many rare and handsome species; among others, Escallòn*ia* bífida, which, if it should be found quite hardy, will be a most valuable addition to the shrubbery. E. glandulòsa, rùbra, and rùbra albiflòra, are also very fine shrubs, and likely to be tolerably hardy. Mr.

Buchanan, jun., pointed out a number of the more interesting species of trees and shrubs, which, though we noted them down on the spot, we have not space here to enumerate.

Lewisham Nursery, Wilmot and Co. — A great many garden seeds are grown in this nursery, and the present has been rather a successful year, with the exception of peas, and, to a certain extent, of onions and lettuce. We saw a curious and striking instance of the importance of keeping the *B*rássica family a good distance apart while in bloom. The imperial winter broccoli was in flower, not far from early York cabbage. There being only one plant of the former, and the seed being much wanted, the plant was covered with gauze to keep off the bees. The seed was kept apart and sown last spring, and the progeny consisted of the imperial winter broccoli very distinct; a cabbage strongly resembling the sugar-loaf, and bearing no marks of its other parent; with hybrids partaking in various degrees both of cabbage and broccoli. Mr. Chaundy informed us that some years ago he planted, in one group, red and white cabbage, savoys, borecoles, cauliflowers, and broccoli; that he saved the seeds and sowed them, and that the produce consisted of many curious hybrids; some entirely like one of the parents, others blending the qualities of different parents, and a number displaying the qualities of their parents in distinct parts; such as a cabbage one half red, and the other green, &c. But the most remarkable circumstance was, that, while all the other cabbages and borecoles in the nursery were destroyed by a severe winter, these hybrids were little injured, and supplied the kitchens of the two families when there was no other cabbage vegetable to be had in the nursery. Most of the popular trees and shrubs are to be had in this nursery, in large quantities, and well grown; all the finer sorts of apples, pears, cherries, plums, &c., by the hundred; quantities of such fine shrubs as *A′*rbutus *A*ndráchne serratifòlia, now covered with flowers, Wistàr*ia* Consequà*na*, and Chimonánthus frágrans (*fig.* 126.), a shrub which we cannot too often bring before our readers, on account of the abundance and powerfully refreshing fragrance of its blossoms, and that, too, in the open air during three of the dullest months in the year, viz. December, January, and February. We believe it will grow quite well in London, and we would therefore recommend it to be planted against every house that has a garden, however small. How it happens not to be cultivated in pots and tubs, for setting in halls and staircases, so as to perfume the whole house, we cannot tell: perhaps because its flowers, though so fragrant, are not showy, and, while they are expanded, the plant is generally without leaves. *R*òsa índica frágrans and *R.* índica álba, now blooming freely, are very desirable varieties, especially for keeping in pots, and turning out in spring, to be treated as herbaceous plants. Ipomœ′a coccínea, the plants being sticked like peas, has ripened seeds in the open garden; a circumstance which has not occurred before, in this nursery, for the last twelve or fourteen years. At Tooting we found it carefully trained against a wall (p. 684.), for the same purpose. Among the handsome specimens in this nursery are *A′*rbutus *A*ndráchne serratifòlia and Schubért*ia* dísticha péndula.

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New Cross Nursery and Bedford Conservatories, Messrs. Cormack, Son, and Sinclair. — This firm also deals largely in seeds, and this year has been successful in acquiring an excellent stock. At the Scotch Agricultural Show at Inverness last summer, Messrs. Cormack and Co. had a person exhibiting specimens of the grass seeds and others used in agriculture. Their nursery, like most others, is full of stock, the shoots well ripened;

and consequently the fibrous roots abundant, and only wants purchasers. There are ample preparations for keeping up the splendour of the Bedford Conservatories through the ensuing winter.

Hockley and Bunney's Nursery, Kingsland Road, and their Show-house at the Bedford Conservatories. — *Nov.* 7. This establishment is carried on with the usual vigour; the stock of evergreens in pots, of roses, bulbs, pinks, and other plants for forcing, at Kingsland Road, is ample; and we trust that the encouragement given during the winter to this firm, and to that of Messrs. Cormack, Son, and Sinclair, in the other Bedford Conservatory, will be such as to justify the great expenses which both parties have incurred, and the very low prices at which they sell their plants.

The Polygon Nursery, Connaught Terrace, Edgeware Road, Mr. M'Arthur. — Our readers are already acquainted with Mr. M'Arthur from his various papers in this Magazine, commencing with that in the First Volume, describing the conservatory at the Grange. We are happy to find that he has here found a scene of operations that will enable him at once to display his taste for ornamental gardening, and his botanical knowledge. The Polygon is destined, when the houses round it are completed, to be a subscription garden like that of Sloane Street; and we have no doubt that it will be liberally supported. In the meantime, Mr. M'Arthur has built himself a house and a seed-shop, and erected several green-houses, a vinery, and pits, all of which are well stocked; and we hope he will receive a competent portion of patronage from his neighbours, and from his country friends: certain we are that no man better deserves it.

The Clapton Nursery, Mr. Lowe. — The number of new and beautiful species in this nursery is astonishing; chiefly through the ample collections sent and brought home from South America by Mr. Anderson, who has been collector to this nursery for several years, and from whom we expect some account of his travels. The stock of Australian plants is in an excellent state. In the heath-house we observed, in flower, in addition to the species noticed in other nurseries, a great number of *E*rìca cáffra, an old species, slightly odoriferous; *E*. exsúrgens, very fine; *E*. vestìta, several varieties, all just coming into flower; and *E*. triviàlis, a large plant covered with bloom. In the propagating-house, of which Mr. Lowe favoured us some years ago with a description (see Vol. II. p. 25. fig. 10.), several plants are rooted of Lucùl*ia* gratíssima, *R*ubiàceæ (Cinchon*iàceæ* Lindl.), a plant, we believe, nowhere else in the country, since it has been lost at Wormleybury, Ashridge Park, and Bromley Hill; Altíng*ia* Cunnìnghàm*i*, inarched on Cunninghàm*ia* lanceolàta; Kennèd*ia* inophýlla, several layers rooted; young plants of Chorizèma rhómbea, and Lobèl*ia* purpùrea and *Tùpa;* Hàke*a* repánda and Pimelèa *l*inifòlia, both now in flower, they continue so in Mr. Lowe's green-houses nearly all the year, many plants of Scótt*ia* dentàta, and other varieties which we have not room to mention. In the hot-house, a good stock of *E*uphórb*ia* spléndens, called also *E*. Míll*ii*. In the camellia-house, C. *Kíssi* showing flower-buds. In the pits, *A'*rbutus procèra and rígida, both considered hardy; as also is found to be that beautiful plant, now in flower here, *C*eanòthus azùreus; Mahòn*ia* rèpens, the layers at last rooted. More plants of Mahòn*ia* fasciculàris have been raised in this nursery than in all the others about London put together; nevertheless it is still rare, and so truly beautiful a hardy evergreen that it ought to be in every collection. *Bérberis e*mpetrifòlia, from Cape Horn, very rare. A new *O'*robus, with bright yellow flowers, from the Island of Chiloe, which will be a valuable addition to this hardy genus. *O'*xalis undulàta, with white flowers, very showy and much admired. Chiròn*ia* trinérvis, in flower great part of the season; splendid. We must conclude by stating that there are several entirely new articles brought home by Mr. Anderson, both in the open air and in the houses, which have not yet flowered, and of which, of course, very little is known.

Other nurseries which we have seen, such as those of Ronalds, Malcolm, Tate, Gray, Fairburn, Middlemist, Barr and Brooks, Parkes, Brown of Hampstead, Smith of Dalston, Smith of Islington, Pamplin, Mackenzie, Moir, Lazonby, &c.; also that of Mr. Brown of Slough, and the Tottenham nursery, which we have not had time to visit; we must defer reporting on till some future opportunity. From the number of these nurseries, open gratuitously to the public every day in the year, it may be conceived what an endless source of entertainment and instruction may be enjoyed by the lovers of gardening and botany resident in London and its vicinity.

Art. V. *Domestic Economy.*

Box-wood as a Substitute for Hops. — M. Du Petit Thouars lately stated to the Philomathic Society of Paris that more boxwood than hops was employed in making almost all the beer brewed in Paris. Boxwood contains a powerful sudorific principle with a bitter taste, which has lately been separated, and is known under the name of Buxinia. (*Bull. Un.*)

Receipt for making Grape Wine, used in 1819. — Water, 4¼ gallons, beer measure; grapes, 5 gallons, beer measure, crushed and soaked in the water 7 days; sugar, 17½ lbs. at 10¾*d.* The sugar came to 15*s.* 8½*d.*; and the grapes to perhaps 5*s.* The cask in which it was made held exactly 6¾ gallons, of beer measure, and produced 34 bottles of wine clear. A bottle of the above wine, kept ten years, proved very good. — *Superficial. Brixton Villa, April,* 1830.

Wine from the common Bramble. — Five measures of the ripe fruit, with one of honey, and six of water, boiled, strained, and left to ferment, then boiled again and put in casks to ferment, are said to produce an excellent wine. In France the colour of wine is often rendered darker by a mixture of blackberries with the grapes. (*Recueil Industriel.*)

Receipt for making Tomato Sauce. — Take tomatoes when ripe, and bake them till they become quite soft, then scoop them out with a teaspoon and rub the pulp through a sieve. To the pulp put as much Chile vinegar as will bring it to a proper thickness, with salt to your taste. Add to every quart ¼ oz. of garlic, and 1 oz. of shallots, both sliced very thin. Boil it one quarter of an hour: then strain and take out the garlic and shallots. After standing till quite cold, put the sauce into stone bottles, and let it stand a few days before it is corked up. If when the bottles are open the sauce should appear to be in a fermenting state, put some more salt, and boil it over again. The sauce should be the thickness of rich cream when poured out, and is, in my opinion, far superior to the famed Bengal chattny, to which it bears considerable resemblance. — *B. B. Sept.* 6. 1831.

Economical Fuel. — A good fire, on a winter day, at a mere trifling expense, is of importance to a poor man. One pennyworth of tar or rosin water will saturate a tub of coals with triple its original quantity of bitumen (the principle of heat and light), and, of course, render one such tub of three times more value than it was when unsaturated. (*Newsp.*)

Where there are extensive fir and pine woods which have been subjected to the injurious practice of close pruning, the knots left will frequently be found oozing out resin; this, gardeners' labourers and cottagers might collect, reduce to a fine powder, and mix up with small coal, horse droppings, and clay, into fire-balls. — *Cond.*

The Leaves of the Hawthorn, it is well known, have been used for the purpose of adulterating tea. Mr. R. Abbey has lately taken out a patent for preparing these leaves as a substitute for tea, and in order that gardeners may try it, we quote his directions. "Rinse the leaves in cold water, steam them till they change from green to olive, and dry them on hot plates." We should think sloe leaves would answer much better than hawthorn leaves, on account of the prussic acid contained in the latter.

Art. VI. *Retrospective Criticism.*

Corrections *for the Encyclopædia of Gardening.* — *Varieties of* Pìnus *sylvéstris*, § 7042. *2d edit.* There can be no doubt that *P*ìnus marítima and *P.* sylvéstris are distinct species. Some thousands of acres of the former have been sown in France, during the last fifty years; and there is no instance in which they have run into any thing like the latter species. Nature has given them quite different habitats: the *P*ìnus marítima grows on the sea sand, and the *P.* sylvéstris on high mountains. The former attains its maturity in from 35 to 50 years, while the latter requires from 80 to 120 years. The wild pine can live on calcareous soils, though it does not thrive on them; while the maritime pine absolutely refuses to grow on calcareous soils, and when planted on them invariably perishes in a few years.

The Cones of the Wild Pine (§ 7040.) are not fit to gather in the December of the year in which they flower, but in the December of the following year; that is, eighteen months after their appearance in May.

The Pináster (§ 7047.). It is extremely probable that this is our *P*ìnus marítima, and your figure (669. *b.*) confirms me in this opinion; which other researches had long since given me. In the Pays Bas, the *P*ìnus marítima is known under the name of *P*ináster. If there is any difference between the two trees, it must be merely that between varieties.

[P. P*ináster and* P. *marítima* are very distinct in the arboretum at Kew, and in Lambert's P*ìnus;* but it does not follow that what is called *P*ìnus marítima, on the sea-coast of France and in the Netherlands, may not be our *P*ináster. — *Cond.*]

Norway Spruce. (§ 7058.). The common French name of this tree is *Epicea*, not *Sapin*, which is applied only to the silver fir.

The common Oak (§ 7070.). Among the differences in quality to be found in the two varieties, or, as I believe them to be, species, *Q.* pedunculàta and sessiliflòra, there is one in favour of the last, which has been fully confirmed in France; this is, that it will grow in shallow, dry, gravelly soil a great deal better than *Q.* pedunculàta; and also that its wood is more firm, close, and heavy, and otherwise of better quality for fuel.

Pyramidal Oak. A variety of *Q.* pedunculàta, altogether remarkable and well worthy of being mentioned, is the *Q.* p. fastigiàta, Chêne Cyprès, or Chêne Pyramidal [the peaked cypress oak of *Hort. Brit.*, and there considered as a distinct species]. It is a native of the mountains of Portugal, and, according to some, also of the Pyrenees. It is an upright, narrow, closely twigged tree, like the Lombardy Poplar, which renders it peculiarly fit for forming avenues to have an effect analogous to the latter tree, and, at the same time, to produce much more valuable timber.

The Tauzin Oak [*Q. Taúzin* of Hort. Brit.]. A European oak, also worthy of being mentioned, *Q. Taúzin*, a native of the south of France. It is neither a beautiful nor a large tree, but it is remarkable for having running roots, which throw up suckers, and it grows in the very worst soils in France; for instance, in the Landes de Bordeaux. Its wood is more esteemed for fuel than that of *Q.* pedunculàta and sessiliflòra. Its bark is very thick, and is considered the best of all the species for tanning. — *M. Vilmorin. Paris, June* 21. 1831.

Principles and Conduct of the Conductor. — Sir, Methinks it is a pity that "A Well-wisher to Horticulture" should have said (Vol. VI. p. 720.) that "care and assiduity scarcely secure permanent situations." If he speaks from the practice of frequently changing his own gardener, he has sufficient reason to fear the publication of anything that has a tendency to make his present one dissatisfied with his place, as he cannot do a worse thing with his garden than place it under the care of a variety of gardeners. Generally speaking, however, I believe gentlemen are as glad to keep a good servant, as a servant is to keep a good place; and be it remembered, that no gentleman will excel his neighbour in the productions of his garden by frequently changing its manager: for, of all servants, there is not one in any establishment who requires so long a time to become acquainted with the wants of the family, and the nature of the soil, and other things from which those wants are to be supplied. I think it was very wrong in the writer so far to enlighten us, as to tell us that "care and assiduity scarcely secure a permanent situation," as that is the only way we can expect to secure it; and having understood that this will not do it, it is very likely to make us careless; as in most cases people act according to the reward they expect to receive, especially among a set of men so ignorant as practical gardeners, who have no idea of returning good for evil. If the number of applicants enables a gentleman to pick and choose at his own price, yet it is not so bad with all of us, that we are obliged to take a place under a person who does not intend to keep us whether we deserve it or not. I know, from dear-bought experience, that there are those who care no more for the comfort of their servants than for the dust beneath their feet: but what is the consequence? Why, the gentleman's property is usually treated in the same way. If, from necessity, a wise man is driven to take a place of this kind, (yet knowing, as he usually does, the character of his employer, before he engages with him,) and has good sense enough to keep him from wilfully injuring the property, he only does as much for his master's interest as will enable him to retain his situation till he can meet with a better; whereas, if a deserving gardener meets with the treatment he has a just right to expect, I ask, in the words of one of your correspondents, "What will not such a servant do for his master?" To enumerate the advantages that would result from the gentleman's stooping so low as to consider the happiness of those about him, would occupy too much of your valuable space: I shall therefore only give this one. A gardener having engaged to serve a gentleman (of whose character he has already enquired, and been satisfied therewith), he will immediately set about such things as require the longest time to accomplish; and which it will perhaps be several years before he reaps any benefit from: whereas, on the other hand, if he has no prospect of staying to reap the benefit of his labours (there is something so selfish in man), he will either neglect it altogether, or perform it only in such a way as will serve his own turn; sooner than another shall succeed him, to have the praise of that which he has not laboured for. I would therefore recommend that gentlemen should in some measure consider the comfort of their servants (if it be only for their own interest); for servants are not so blind in these "march of intellect" days as not to know when they are ill or well treated. You are accused of reviewing masters, not gardens. In that I can see no cause for complaint, as no one has occasion to mind his actions being brought to light, if they will bear inspection; and if a gentleman provides a comfortable place for his servants, and pays them liberally, he must be proud to see it in a publication like yours, where his liberality will become immortalised, and his name be known and respected at home and abroad. If it be true that there are some whose character is the reverse of this; the sooner they are exposed the better, as they may be the sooner altered. You are also accused of making gardeners discontented: but, if we have not cause to be so beforehand, I hope we have good sense enough not to be made so by reading your Magazine; and if we are so without cause, the sooner we leave the better, to make room for those who are more deserving, or to give our employers an opportunity to buy their "luxuries 50 per cent cheaper than they can grow them;" though I believe, where there are many luxuries grown, the gardener would not hesitate to have a fair price allowed for them, and be himself at the whole expense of growing them, notwithstanding your correspondent says that his gardener would not take a large garden rent free. I dare say he will not have the offer; but if he should, and has not money enough to carry it on, I have no doubt he will be able to find a customer to take it off his hands, and give him something besides; else how comes it to pass that many obtain a good living as well as pay high rents? Much more might be said, by any one possessing the abilities of your correspondent, but more cannot be reasonably expected from an ignorant practical gardener. — *R. T.*

Principles and Conduct of the Conductor. — Sir, I felt very sorry to see in the Retrospective Criticism (Vol. VI. p. 720.) the lashing you received from your " early and excellent" correspondent " A Friend to Horticulture; " and while I admire the resignation with which you bore it, I cannot help stepping forward in your defence. Although I have not the honour of your acquaintance personally, I admire your conduct and principles generally. " The head and front of your offending " seems to be, that you have sprinkled a few politics into your Magazine; and that as soon as a gardener becomes acquainted with politics, he becomes discontented. If acquaintance with politics has a tendency to make people discontented, does it do more among gardeners than among the rest of the community? Are gardeners the only creatures who become discontented by reading politics? But if reading politics has the effect of making all alike discontented, I feel truly sorry for the nobility, gentry, and clergy, who read all the politics in the daily, weekly, and monthly publications. Such people, Sir, must, by calculation, be full sixty times more discontented than I am, who only get a peep into your Magazine once in two months. The " Friend to Horticulture " says his gardener is a worthy fellow, and industrious: I make no doubt but that " the labourer is worthy of his hire; " whether the hire is worthy of the labourer, I am not so sure of. He may be industrious, too: I suppose that means that he works, and earns 6*d*. or 7*d*. after working hours every day; but I greatly fear that he has no more brains than he ought to have, or else that the few brains he has are enclosed in a skull of a comfortable thickness, or ass-like shape. If the " Friend to Horticulture," with the assistance of his gardener, cannot grow vegetables but at fifty per cent dearer than his neighbours, depend upon it they are no great conjurers. If his gardener will not accept of a large garden *rent-free*, I can assure him that I know of one that would; and that he would soon play Old Harry with the market-gardeners in his neighbourhood, who pay 5*l*., 10*l*., or 20*l*. per acre rent. But I presume that the " Friend to Horticulture " employs his gardener (or, as he terms him, his servant and labourer) three parts of his time sweeping walks, mowing pleasure-grounds, and dressing flower-beds, yet expects to be remunerated in fruits and vegetables. This, Sir, will never do: the " Friend to Horticulture " should put a greater value upon his pleasure-grounds, and he is wofully mistaken in thinking that even mere labour is a marketable commodity. There is no sort of labour, however simple, but requires a certain degree of skill; and it is the skill of one man more than that of another that makes his services more valuable than another's, else wherefore should gentlemen give more money for a beautiful painting by a master than for the daubs of the house and sign painter? If the " Friend to Horticulture " is really and truly a friend to horticulture, he should employ a first-rate horticulturist, and give him a first-rate salary, else his house may be filled with *cheap* paintings, or his garden dressed by hedgers and ditchers; or, what will be *cheaper still*, not dressed at all. I am, however, determined to take the advice of the " Friend to Horticulture," and never trouble my head about politics. " Be king who may, I will be subject," for I am determined to live contented; and if I should ever attain the *honour* of being Vicar of Bray, Sir, I shall endeavour to keep my living as long as I live. I shall give a hint to the "Friend to Horticulture," and all such of the nobility, gentry, and clergy as do not allow their gardeners sufficient wages to purchase your Magazine for themselves, but who occasionally lend the Magazine to their gardeners for the purpose of letting them know how ignorant they are, just to take a pair of scissors and clip out the poisonous pages; or rather clip out such pages only as suit them, and lend them to their gardeners. This will have a great tendency to make their gardeners *contented;* and, truly, contentment is the greatest blessing a gardener can enjoy. There are very few who do enjoy such blessings: for my own part, I never was contented till I could grow fruits and flowers as good and as cheap as other gardeners. The "Friend to Horticulture" has made me very proud of myself: he says it is not one gardener in a hundred who ever raises himself to become an *overseer.* On his word, then, I most *contentedly* and triumphantly sign myself— *A Gardener in a Hundred. Dec.* 18. 1830.

Weeds as Manure, and various Remarks. — Sir, From reading the review of Cruickshank's *Practical Planter* in your Vol. VI. p. 448., I am led to make a few straggling observations. The system I advocate is equally applicable to horticulture as to agriculture.

Cruickshank says, as quoted by the reviewer (p. 453.), "It may seem a very paradoxical fact, but it is nevertheless true, that wood, instead of impoverishing the ground on which it is produced, nourishes it." (To be sure it does.) "There is very little of our waste land that, if trenched or ploughed, will carry even a moderate crop of grain, unless it receive a considerable quantity of manure. After bearing timber, however, the contrary is found to be true." So the old, vague, unphilosophical, unmeaning, foolish theory of rest is demolished at last, or rather explained. His subsequent reasoning is bad.

Farther on (p. 454.) he says, "That the soil should be enriched by the production of wood, when the experience of ages has proved that it is always exhausted by other crops, will seem to them a paradox of the most extravagant kind." By this statement it does. But other crops are carried off annually by man or beast, root and branch. This I shall explain.

Cruickshank's theory is not confined to wood; it includes all vegetation. This is a truth as palpable to every one, when pointed out, as the rotundity of this globe, or the simple act of Columbus making the egg stand on end; yet it is no less lamentable than true, that, notwithstanding all the splendid talent which has been exhibited from Tull to the present day, this very obvious fact should not have been long ago adopted as a fixed and leading principle in all agricultural and horticultural operations. It stares us in the face in the forests and prairies of this country, the pampas of Buenos Ayres, the dirty summer fallows of England, and every where and in every thing. The principle of a clean naked fallow (fortunately a rare occurrence) is utter annihilation. Had farmers and gardeners been able to eradicate weeds, as they are called, the soil would have been a *caput mortuum* long ago. But weeds, like the principles of liberty, destroy, hack, hew, and persecute as we may, rise again in due time, not to injure, but to fertilise and benefit. We must follow Nature; all other guides are fatal *ignes fatui.* "He that made the earth gave it laws that 'tis not good to break." After much steady observation, thought, and practice, for some years past, I am perfectly convinced that all applications, no matter how large, of animal manures, animal substances, and minerals, are comparatively nugatory, without profuse supplies of vegetables and their roots; and I am not sure that an occasional liberal dressing of wheat flower, Indian corn meal, &c., would not be the most profitable manure of all. Lions and tigers prey on flesh, and the vegetable monarchs of our forests attain their highest majesty on vegetable food, and in due time return again to the soil, to produce increased fertility. This is very obvious on the banks of the Ohio and

Mississippi; and vast masses, too, of drift wood are carried into the ocean every flood. Does all this timber grow and die to no purpose? What is the man's religion who says it does?

The second extract from Cruickshank is by no means a correct statement. If woodlands were kept clean, and all the leaves and dead branches carried off, the trees grubbed up root and branch, again replanted, and so on, the soil would eventually become as barren as any cotton or tobacco plantation in the southern states; and that is poverty with a vengeance. The cause of this is very obvious, but not to the planters; they say it is the tariff. Oh, for the schoolmaster! The fact is, when woodland is cleared in this country, the crops are often very moderate until the progress of decay has brought the roots into action. I will illustrate this farther. The general system of farming in this state is,—Indian corn, often very foul; oats (a wretched crop in this hot climate), or barley; then a very moderate dressing of manure and a bountiful crop of weeds are ploughed in, producing a very fair crop of wheat, much better than the skill of the farmer deserves (the crops obtained are not at all warranted by the quantity of manure applied); clover and Timothy for two or more years, and often as long as it will mow and pasture; then Indian corn again; and so on. The old sod is usually ploughed in the spring; then corn planted in May. For some time it exhibits a very sickly, yellow, and poverty-struck appearance, until the green roots and weeds begin to decay: it then grows with great luxuriance and beauty. If, after wheat, the land is ploughed before the weed can grow, and sown with buck-wheat in July, which is a very clean crop, the succeeding crop of Indian corn is very poor.

Further, Cruickshank says, "Trees draw their nourishment from a much greater depth than any of the grasses, roots, or different kinds of grain." I doubt this very much, as taking place to any extent. He would infer that trees fertilise the soil, not by adding any thing to it (except leaves, &c.), but by not taking any thing from it. The great bulk, nearly the whole, of all the tree roots I have ever seen, and I have seen many, is within two feet of the surface. It is their decay which enriches the soil: they exhaust, and then enrich. I lay no claim to the original discovery of this principle: it has been loosely hinted at and described by various writers; but I think I may venture to say that I am the first farmer who has employed it in his rotation of crops; and I will venture to say that at no distant day it will entirely change the present results in the best system of agriculture, especially in hot climates. I have had, and have, several pupils, young men of talent and capital, well convinced of the truth of what they have learned, and competent to practise it. As with all improvers, a due proportion of sneers, scorn, derision, and ill will has fallen to my share; and, as usual, those who know, observe, and ask the least, talk the wisest and most learnedly. To the want of vegetable food I entirely attribute the frequent failure of grass, clover, turnips, saintfoin, &c., in England, under the improved system of farming; and the cleaner the land is kept, I suspect, the more they fail. To say the land is tired, proves something is wrong, but explains nothing. I am quite satisfied that the crops under the old wretched system of farming were much better than under the new, in proportion to the manures, skill, management, &c., applied in both instances. Weeds, misplaced except in summer fallows, were the old farmer's salvation, but he did not know it. Weeds do not rob the soil; they either enable the farmer to do so or prevent him, as the case may be; they keep up the fertility of it; they rob the crops, but not the soil. I see it often mentioned in your Magazine, as a great advantage, to leave fruit borders uncropped: this is not Nature's way of proceeding; and those who do not follow her laws make sad work of it sooner or later. I should greatly prefer sowing them with clover, grass seeds, turnips, lupines, borage, marigolds, or even weeds, — yes, weeds, the vile things! —&c. &c.,

manure and top dress them, and dig them in half, full grown, and ripe. I do so in my garden with great success.*

I shall not now say much of my own farm, as any detailed account would be unintelligible and unsatisfactory, for many reasons, and not altogether belonging to your journal. My present purpose is to direct the attention of horticulturists to vegetable manures.

Nine years ago, my farm was almost a *caput mortuum*, owing to unusually bad management long continued. One of my neighbours, a farmer by intuition, a Minerva born, learned at all points, said lately to one of my pupils: — "It will be so again in five years." Query, — If this system has put my farm on the road to matchless fertility from utter exhaustion in a few years, by what scorpion process is it to destroy it in five more? Have you any Minervas in England now? They are far more plentiful here than rattlesnakes, and far more mischievous: the latter bite only when injured. I have reached 70 bushels of Indian corn per acre; next year I fully expect 100 or more. Indian corn rather exceeds beans in England, the land being equal. I raise finer crops of Swedish turnips here than I ever saw in England or Scotland, or grew myself in England. They have never once failed in the nine years. I sow them after wheat and barley, the same season. My farm is 100 acres; about 75 under the plough; the rest in grass. My rotation is eight years, growing in that time eighteen to twenty crops (in the southern states much more might be done), above one half harvested, and the remainder ploughed in; all the rest is in strict accordance with English and Scotch principles. I have now growing the fourth crop this season in some of my fields. It is not what crops we grow, it is the use we put them to, that does good or evil. I shall make this season yard manure sufficient for 45 or 50 acres. I could manure my whole farm annually by eating all my Indian corn (18 acres, and not selling any straw, next year I begin to sell it), with 18 acres of turnips and other crops. This could hardly be done in any country in which Indian corn will not grow, with turnips as a second crop. This system leads me to the belief that all crops are exhausters and improvers (independently of their subsequent application), just in proportion to what they take out of the soil (if one crop really takes more than another), and what bulk and quality of roots they leave behind. This I take to be the true solution of the old doctrine of rest; which signifies an accumulation of vegetable matter in the soil; which when man destroys, barrenness is the result. Clover is considered one of the best improvers; and so it is: yet it is one of the greatest exhausters, until its roots are decayed, as are all grasses and green crops. I have top-dressed clover in the spring with yard manure; mowed the first crop; ploughed in the second; sowed turnips, which were very poor; the succeeding crops, rye and corn, were excellent. I plant Indian corn for green fodder, after harvest, in June and July, on wheat and rye stubbles, and after a second crop of clover ploughed in. After the wheat and rye the corn comes up dark, healthy, and vigorous; after the clover, yellow, sickly, and unthrifty, but recovers. The succeeding crops after the clover are superior. In both instances the corn grows from 7 ft. to 10 ft. high. The ears form well, but do not ripen, making most excellent food. The pigs steal the ears, whilst the steers and cows eat the blades (leaves). Wheat, barley, &c., absorb what is in their roots in ripening; clover, turnips, &c., being not permitted to ripen, do not. Indian corn, horsebeans, &c., cut partially ripe, are intermediate between these two. If a field of rye or any other grain is harvested, and another ploughed in green, and both sowed with any other crop, that crop will grow for a considerable time much better after the former than the latter. I do not yet see the philosophy of this. Is the soil more exhausted whilst the rye is yet green (always admitting that it returns more than it takes, after it decays when ploughed in), than after it is ripe and all the roots gone? My observation would lead me to suppose that it is. All this puzzles me. When a crop of grain is ploughed in green, the land turns up almost like an old sod, and full of roots: so much so that we can scarcely cover the Indian corn when planting (sowing) unless the hoes are very sharp. Indian corn is universally grown in this country, and so ought horsebeans to be in England in all soils that will grow them. The former matchless crop you cannot grow unless you can raise the temperature at midnight from 70° to 84°. I have known it 85°, and felt it. Meal and turnips are much superior for fattening cattle to either alone. This practice, with green crops ploughed in, as far as the climate will permit, would revolutionise the face of the whole of this country.

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* We wish this ingenious writer could see the fruit tree borders in his brother's garden at Longford, near Manchester, noticed p. 542., and compare them with the fruit trees where the borders are dug and cropped as he advises. — *Cond.*

Is all this nonsense and quackery, or is it a bombshell cast into the established system and opinions? My views, I think, show the very impoverished condition of the soil whilst clover is living, and its great fertility when decayed. Wheat fails after clover in Scotland and the north of England, and is by far the best after it in this country. Difference of temperature will account for this. For the "something is removed;" read "the clover roots being decayed makes the wheat successful."* There is nothing removed but the poverty which is unfavourable to wheat. These somethings, rootings, and tirings are poor guides and explanations.

There is much to be learned and done yet in England, as well as elsewhere, and it needs no ghost to tell it, in this most difficult and complex, most noble and godlike, of all the arts and sciences. The future condition of hot climates is a darling dream of mine. All they have yet done (with the exception of this country), and how transcendent in some instances! was previous to the art of printing, or when it was of little value. The day is not far off (and close at hand, if free trade were established, so much talked of every where and practised nowhere, or likely to be so soon; northern countries had better keep trade as it is as long as they can) when hot climates will as far exceed cold ones (the minerals alone of the United States would make a respectable island) in productiveness and variety of food, comforts, luxuries, &c., and arts, sciences, and refinements, personal size, strength, and beauty of man and beast, as latitude 52° now exceeds in all these latitude 60°, and the face of nature will be as much more intensely green too. But all this is as heterodox, visionary, and absurd here now, and in "the fast anchored isle," as republicanism was sixty years ago every where.

In less than another century poor despised and neglected agriculture and its professors will be at the top of the ladder; "they who are first shall be last, and they who are last shall be first," if I read the glorious and cheering signs of the times rightly. We are thought little of here, I assure you. What stronger proof of this is required than the fact, that our farmers themselves think meanly of the first and most important of all professions? Please to put this on record from a man who has seen, thought, and read much, and who does not herd much with the world as it now is.

When a man advances any thing new and startling, perhaps his readers have a right to know something of his pretensions. I give you some of mine: — I was a pupil of the late excellent Mr. Runciman of Woburn, and of that matchless man and farmer, Mr. Blomfield of Norfolk. I resided a short time in the immediate neighbourhood of the late Mr. Rennie of Phantassie. I was two years at Edinburgh College, and one season at the Royal Institution in London. I made an agricultural tour on foot over the greater part of Scotland and some parts of England; and this was no education for fitting a young man of ardent mind and feelings for the yoke of tithes, game laws, &c. But enough: I left relations, a few friends, home, country, and property, and I am content.

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* See Sinclair's Husbandry of Scotland, vol. i. p. 325—327. 3d edit.

P.S. I see in your publications American plants and bog earth always coupled together. This country is not a bog, nor any thing like one. Rhododendrons, azaleas, &c., grow in this neighbourhood on the dry steep declivities of gneiss and hornblende rocks; and thousands of rhododendrons grow in the state of New Jersey upon sands as dry and barren as those of Brandon in Suffolk. I am not accustomed to writing, as you will perceive, and I fear my story is somewhat confused, but of the truth of its principles I am well convinced from experience. They will bear study and investigation. Are air and water of any other use to vegetation than to ourselves? Plants absorb and decompose them; so do we: poor diet alone, notwithstanding. Does not vegetation derive all its food from what exists in the soil, and is not vegetable matter the beef and bread of vegetables? For this purpose weeds grow. My experience says something for this doctrine. Nature farms and manures as well as man; but he has gotten it into his head to reject her assistance, and do things his own way. — *George Henry Walker.** *Longford Holmesburg, near Philadelphia, lat.* 40°, *December* 24. 1830.

The Articles on Cottage Gardening. — Sir, I have read the articles on Cottage Gardening, &c. (Vol. VI. p. 139. to 208.), with considerable interest; and I take the liberty to point out what I consider to be errors therein, as well as to suggest a few useful hints.

The Growth of Barley per Acre is estimated (p. 147.) at ten quarters. Having had considerable experience in the best barley districts, both in Hants and Oxon, I can confidently state that the average growth is not five quarters per acre: five quarters would be considered a good crop, yet occasionally eight quarters are grown in rich soils, under favourable seasons. Few districts yield more than seven sacks per acre, say four quarters: ought not the average to be calculated on? I fear that grower would be deceived who expected to thresh ten quarters from his acre, garden ground not excepted.

On Malt-making (p. 148.). The time necessary for steeping barley is given as one hour. Surely this period of time would not be sufficient to penetrate the skin of the corn, nor would the flour imbibe any moisture. Forty-eight hours are the usual time taken by maltsters for steeping; also using the water-pot at a certain date.

Malt (p. 147.). The increase upon the process is given at 25 per cent. This is far too great. In proportion to the largeness of the increase will be the depreciation of the malt. Hertford and Ware malts are bought by the London brewers in preference to others, because the increase is so small, preferring high to inferior quality and low price. In 25 per cent increase, the acrospire would penetrate ¼ in. beyond the berry [grain or kernel], carrying off in the growth a certain quantity of saccharum, and rendering such an increase, except to the maker, a dead loss.

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* This gentleman is brother to Mr. C. J. S. Walker of Longford, mentioned p. 542., a patriot, and the son of a patriot whose memory is held in respect almost amounting to adoration by the people of Manchester and Leeds. See, in proof of this, *The Examiner* for October 2. 1831, p. 633. — *Cond.*

Hops are stated as capable of being grown in every cottage garden, as doubtless in most seasons they are. But are you aware that, to the great annoyance of the cottager, it is necessary, before picking, to enter the garden, place of drying, &c., to secure to the excise the paltry 1¾*d.* per pound; without which precaution, a fine of 50*l.* can be levied, on using unexcised hops. Thus God's good gifts are given to look at only, not to be made serviceable to his creatures, even though they be wildings. I may here also observe, the law allows not of the making of unexcised malt. To distil spirits from any sugar-wash or mangold wurzel is also illicit; tobacco is, I believe, also under the ban of excise. But, Sir, let us hope, now, that we have a more considerate ministry, that part of these vexations may be done away with.

It is doubtless extremely beneficial to the labourer to be able to drink his own brewage. Query,—Would not a species of cooperation be useful here, in the purchase of a proper plant for the process? Vessels that have held soap-suds or greasy matters are alike injurious to fermentation; cleanliness is absolutely necessary to wholesome and well flavoured beer. From scarcity of plant many shifts must be resorted to. Some six families uniting might, for a small sum, purchase the things requisite; one creditable person of the firm being paid an annual sum for stowage room, and seeing all things are returned in repair and order. The parties might have the plant in rotation. Recently the stupid act of Charles II. has been repealed, which act prohibited the lending of any brewing vessels.

Mead. I believe, Mr. Editor, that the duty on manufacturing mead or metheglin for sale was not taken off last session of Parliament: why not also take off this most oppressive prohibitory tax, which has actually, from its burden, driven the mead-maker out of the market, and it is no longer to be procured. Prior to the laying on of the duty, this beverage was to be found in many districts, and for sale in many country public-houses. The last exchequer receipt was 30*s.* for the year. Every means ought to be taken to encourage the growth of bees; none would be more conducive to it, than enhancing the price of honey,—an annual premium to the cottager, without labour or outlay; in short, a God-send. Also, very considerable sums are sent to a foreign market for wax and honey, which we could with encouragement supply ourselves.—*John Latham. Llanelly, Caermarthenshire, Dec.* 9. 1830.

The Manual of Cottage Gardening.— Sir, Having for several years had large estates under my professional surveillance, I am no stranger to the habits, the wants, and the actual condition, of the peasants. I have for some time been urging on the attention of landlords the great importance of allotting land to this useful and industrious body, feeling convinced that, under judicious regulations, this system would contribute greatly to their comforts and general welfare. With these impressions, I saw with much pleasure your offer of a prize for the best essay on the cottage system. I watched the result with great anxiety: I have since read with due attention the essays, with your introductory observations and notes. I beg to be permitted to offer to you my humble tribute of applause for your patriotic exertions in the cause of the agricultural labourer, and at the same time to point out some errors into which it appears to me you have fallen. I must assume the labourer to have been the primary object, at least, of your solicitude; and that your publication was intended to indicate to the landowner the privileges he ought to grant, and to the labourer how he could use them to the best advantage. But it appears to me that you have gone much too far. Your publication is calculated to alarm the former on the score of expense, and to distract the latter by a multiplicity of details, many of which can be of no practical use to him. In all schemes for the amelioration of the condition of the labourer, it is material to keep in view his essential condition in life, as a labourer for hire, and that you have only those portions of time which are not engaged in his master's service to deal with. If you allot him more land than himself and his family can properly cultivate during the time which may be called his own, or encourage his raising produce which must encroach on the time during which he would be otherwise receiving certain wages, rely upon it you are doing him serious mischief. The labourer's wants are few, but constant and certain. Wages of a sufficient amount are his best reliance. If he has land enough to induce him to expend, on his own occupation, days for which he would otherwise receive certain pay, should all turn out well he may not be a loser; but it must be remembered that

> " The best laid schemes of mice an' men
> Gang aft aglee."

He may have a failing crop; the deductions from his weekly wages have obliged him to run up a score at the shop for the supply of his weekly wants; he is now unable to pay it off; once in debt, he is obliged to continue his dealings on very unfavourable terms, and his progress to his original state of destitution is suprisingly rapid. I know some intelligent farmers who have seen so much evil result from this, that they will not suffer any of their labourers to take credit at a shop, but prefer making advances to them for reasonable purposes. I could produce unquestionable authority from those who have had great practical experience amongst the labouring classes, for the position, that it should be made quite a cardinal point to apportion the land granted, in every case, as nearly as possible, with reference to the labour the family can devote to it, without sacrificing wages.

A brief manual, limited to the rotation of crops, and other management of such portions of land, and to the care of the pig, manuring, &c., contained in some ten or twenty pages at the utmost, and printed in good-sized type, would be of the greatest advantage to the labouring classes; but excuse my freedom when I say that your manual would be quite useless to them in nine cases out of ten. You are not, perhaps, aware that there are very few adults, or rather fathers of families, in country villages, who can read at all; the schoolmaster was not abroad in their day. The contents of the manual must be conveyed to them by their children: it is, therefore, almost superfluous to add, that it must consist of reading made easy by means of extremely simple terms and clear large type. Your manual will be very useful to the class immediately above the actual labourer, but you may depend on it that any of the objects beyond No. 1. in p. 6. [*Gard. Mag.*, vol. vi. p. 142.] are not of practical attainment by him. A proper cottage manual is a more important agent for carrying the system into effect, than would be supposed by those who are not intimately acquainted with the peasantry; for they have no idea beyond planting their ground with potatoes year after year. I would also particularly impress on the minds of those who are disposed to grant land, that a great deal of personal superintendence is absolutely essential; otherwise, a very large proportion of these persons will never avail themselves of a tithe of the advantage placed within their reach. They are, generally speaking, a loyal, civil, grateful, obedient, and enduring race; kind and attentive to each other under illness and misfortune, and easy victims of oppression: but they have not half the intelligence you give them credit for. They are careless, negligent, and improvident, and have very little notion of the importance of order and arrangement. I had occasion to call at a cottage this morning, the owner of which has the charge of 300 acres of wood. He has good wages and a good-sized garden, he is one of the most sensible of his fraternity in the parish, and is an excellent servant. I found his pigsty full of large holes, though there is plenty of good plank stone within a few yards of his house; the runnings soaking amongst the grass close to the door of the cottage, instead of being directed to the manure heap, only two yards from the sty; the pig up to his knees in dung, in which he had nearly buried the cabbage thrown in upon it in the morning; a small patch of cabbages was the only portion of his garden under cultivation. I saw a wife, son, and two grown-up daughters at home. You will think this hardly credible; but it is a common case: and therefore I assert that very little good will be accomplished, unless judicious and constant superintendence be enforced as a very essential part of the system.

I must now say a few words on your cottage architecture; and here, again, I fear you will accomplish no practical good, by aiming at too much. You must remember you are addressing those who have hitherto considered the ordinary repairs of wretched cottages, for which they had some difficulty in collecting rents, an intolerable burden, and who have very generally, therefore, let them *en masse* with their farms; thus indirectly securing a rent from the farmer. He has taken care to deduct a good rent from the wages of those labourers in his employ who were placed in them, and the rest he has let to the parish for paupers. Regular repair was out of the question; serious dilapidation in time was a necessary consequence; and it being part of "the system" to have as few domiciles as possible in the parish, with reference to the constantly increasing poor's rate, dilapidation past repair was no source of disquiet to landlord or tenant. That this was a most impolitic and unjustifiable system is, I believe, generally felt; and I cannot doubt that the landowners are now convinced of the propriety and policy of providing warm, comfortable, and convenient habitations for those on whose exertions, health, and strength their means depend. Some gentlemen possessing ample fortunes will, as a matter of taste, erect cottages near their demesnes upon a superior scale, without reference to any return; but, as a general measure, it is worse than useless, to furnish plans for cottages from which any reasonable return in the shape of interest for the money expended is not to be anticipated; for this will discourage building at all, particularly when a considerable reduction in the rent is required. The labourer ought not, nor could he afford, to pay more than a shilling a week for rent. I presume the estimates you have given are for building the cottages and for materials only, and do not include the well, tanks, and other external contrivances suggested by you, which are very expensive. We can build as cheaply in this part of the country as in any; having abundance of excellent stone and stone tile close to the surface of the earth, and a cheap market for timber: but I very much doubt whether the most economical of the plans you have given, together with the conveniences suggested, could be completed for so little as 300*l.* But, supposing the cost to be 50*l.* less, who can be induced to build cottages to pay one per cent? If this should meet the eye of any reader of the Magazine who has had practical experience in the building of labourers' cottages, who is thoroughly acquainted with the prices of work and materials, and who would furnish two or three plans of cottages which he knows have been built at the cost of from 70*l.* to 100*l.*, he would be rendering a really practical service at this moment. There are two or three other points, connected with the condition of the agricultural labourer, on which I intended to offer some suggestions, but I feel that I have already trespassed too far on your valuable space. I remain, &c. — *Charles Laurence. Cirencester, Dec.* 1830.

Certain Plants alleged to be hardy, which are much less so than was expected. — Sir, Allow me a small space to point out to Mr. Sweet the impropriety of describing plants in *The Flower-Garden* as hardy, which he must be aware will not survive one winter in five in the open border, even with the protection which he in some cases recommends. Many persons will not hesitate, on such an authority, to risk perhaps scarce and expensive plants, and will, in many instances, find them destroyed. It does not follow that because some of the plants in question may have survived for twelve months in the borders at Bury Hill, where they have, in all probability, received more attention than can be bestowed by persons generally, that Mr. Sweet can be justified in recommending to his readers a practice which must inevitably expose them to serious losses. I do not hesitate to assert, that very many of the herbaceous and bulbous plants which are described in *The Flower-Garden* as hardy would, at any rate in the immediate neighbourhood of London, fall a sacrifice, by being subjected to a dense atmosphere, and the wet and frost of winter. There are many plants that will bear a very great degree of cold, but are at the same time very impatient of wet. In this country severe winters are usually preceded by heavy and continual rain. Now, it must be obvious to the most common observers, that, when the ground is saturated with wet, the plants must, necessarily suffer from sudden frost. In placing too much reliance on catalogues, and acting on the advice of some nurserymen, I have lost a very considerable number of plants that have been described as hardy, by planting them in the open ground, and have, in consequence, suffered a great deal of disappointment and loss. It is to prevent others from experiencing the same misfortune that I take this method of cautioning those who are fond of cultivating alpine and hardy herbaceous plants not to place implicit reliance on books; but, when they obtain a new plant, to wait until they have increased it before risking it in the open ground.

Mr. Sweet, I find, recommends planting ixias, gladiolus, &c., in the spring in the open ground. As I have no experience in this method, I do not for a moment doubt that it may be done with success; but a difficulty presents itself to my mind, and I should be much obliged to this gentleman, or to some of your readers who have acted upon his suggestion, to point out how it can be obviated. I observe, that, however dry the bulbs are kept, the roots begin to grow, and also the leaves, about September or October. Now, I apprehend, if they are not planted, but kept until the spring, it must tend to injure their growth, and, of course, cause them to flower very weakly. I shall be very thankful for some information on the treatment of ixia, gladiolus, &c.; for I am free to confess that I meet with disappointment year after year; the bulbs, although growing apparently luxuriantly, seldom producing bloom.

I trust it will not be supposed that I have any intention of impugning Mr. Sweet's work: I am fully sensible that the character of *The Flower-Garden* is too well established to suffer from any remarks of mine, and no one can be more ready to bear testimony to the ability and talent which are displayed in the conducting of it; but, as I think, in the case in point, it is likely to be misunderstood, I have taken the liberty to advert to it. If I am wrong in my view of the matter, so much the better for those who have acted upon his recommendation.

Erpètion renifórmis is represented in Mr. Sweet's *Hórtus Britannicus*, and I believe also in *The Flower-Garden*, but I have not the number before me in which it is figured, as hardy. Now, I placed one in a frame with some alpines in the winter of 1829–30, and lost it. I put one in the green-house in the same winter: this, of course, I preserved, and it flowered very beautifully. Last winter I put another in the frame, one I planted in the open ground in a warm aspect, and also kept one in the green-house again: the only one I preserved was that placed in the house; the other two having perished. Campánula púlla perished last winter in the frame, and also in the ground. — *E. April* 17. 1831. [See p. 475. — *J. D.*]

Mr. Howden's Strictures on the Irish Peasantry. — In Vol. VI. p. 657., your correspondent Mr. Howden has indulged himself in very unwarrantable and severe strictures on the Irish peasantry, their cabins, &c. On reference to "Retrospective Criticism," p. 505. of the current Volume, I perceive that Mr. Murphy of Moydrum Castle, Athlone, has very naturally (as an Irishman, I presume) taken it up. To this gentleman I feel obliged;

and I should have left it with him, had I not been strongly called on to reply by the latter part of Mr. Howden's letter, and by the conclusions Mr. Murphy naturally drew therefrom. There is only one part of Mr. Howden's description of the Irish peasant to which I shall advert, and that is, the passage in which he speaks of his countenance expressing *fear.* He must know little of the Irish character, indeed, who will not admit that, of all people under the sun, the Irish peasant is the least actuated by that passion.

That Mr. Howden has too highly coloured his picture, it would be a waste of time to prove; I can only suppose that he fancied himself in the precincts of a lunatic asylum, and was describing one of its maniacal inmates just emerging from the terrors of an obdurate keeper: his description is certainly more in keeping with the latter. However, it ought to be remembered, at all events, that an Irish peasant, whatever he may be, is as he came out of the hands of his Creator.

Mr. Howden has asserted (to bring up the rear of his libel) that, "when in Lord Doneraile's employment, he paid ten men, four women, and four boys, with two pound notes on a Saturday night." This he has stated in the most emphatic terms; but, if so, I beg leave to tell him that he did not pay them in full, as that was precisely the ten men's wages in Mr. Howden's time, without bringing into account the four women and four boys. He afterwards winds up his assertion by supposing "they are not much better at present." As I do not deal in suppositions but facts, I assert, without fear of contradiction, that Lord Doneraile's workmen are *as well paid*, as *respectable* and *comfortable*, as those of any other nobleman in either England or Ireland. Their wages in cash, for nearly twenty years past, have been 5*s*. per week, together with a good slated house, rent-free; as much fuel as supplies them, without expense; as much potato-ground as can be spared to each, at a light rent; and, in all cases where they have their own manure (which is the case, with very few exceptions), they have the ground free, and tilled: in short, at the most confined calculation, their wages, &c., amount to at least from 1*s*. 3*d*. to 1*s*. 4*d*. per day.

I have now done with Mr. Howden and his descriptions altogether; and will leave him for the future to some one better calculated and inclined to take up his literary gauntlet, than, Sir, yours, &c. — *John Haycroft. Doneraile, Sept.* 21. 1831.

Dovetail-Grafting. — Sir, In Vol. VI. p. 698. is a letter from Mr. Alexander Diack, in which he expresses "no little degree of surprise" at seeing announced in some of the periodical publications and newspapers, as copied from the *Transactions of the London Horticultural Society*, a mode of grafting on the large branches of old trees, the merit of which is ascribed to me. As I have no wish whatever to claim any merit due to another, and to show that I am the author of that mode of grafting called dove-tail grafting, as well as to allay that "no little degree of surprise" created in the mind of Mr. Diack, please to insert these few observations. I would, then, observe that Mr. Diack might have seen, in your Magazine for July 1827 (Vol. II. p. 430.), that a paper, describing my mode of grafting, was read at a meeting of the London Horticultural Society held on the 6th of May, 1823; for which paper the thanks of the Society were then communicated to me in a letter by the secretary (Mr. Sabine). Now, Mr. Diack's paper on his mortise-grafting was not publicly known till the 28th of August, 1827, which was eight weeks after my dovetail-grafting had been noticed in the Gardener's Magazine, and above four years after it had been read at the meeting of the London Society. I must here beg leave to assure you, that, in being thus particular, I have no other motive than that of establishing my claim to the priority of the invention, having no wish whatever to lessen that merit which I am fully persuaded is due to Mr. Diack.

Mr. Diack states that his process "is nearly the same as mine," which implies that there is a difference. As to the name "mortise-grafting," it is not, in my opinion, an appropriate one, for the opening made in the stock to receive the scion is not (according to the rules of carpentry) a mortise, but properly a groove, and which, in my process, is made in the dovetail form; from which circumstance the scion, when slid into the groove, is quite secure, without being tied, the bandage which I have recommended being only to secure the clay from dropping off.

Mr. Diack farther states, that "he does not know how long I may have been practising my method:" to which I reply, that I have practised this mode of grafting ever since the year 1816. Early in the spring of that year I headed off some very old apple trees, purposely to graft them with some approved sorts; and being anxious that the operation should be attended with success, I was at a loss how to proceed, knowing that the common mode of slitting and lifting the bark, or driving in a wedge, so as to make an opening of some sort, did not always succeed, as well as being very unsightly, and the grafts being frequently blown out by the wind. I therefore thought of waiting till the stocks had made some young wood, and so either bud late in the summer, or else graft upon the young branches in the following spring. However, being anxious to have the operation performed, I set to work, and in the process of my varied operations originated that neat and successful mode, the dovetail-grafting, which is performed in the following manner: — The scion is selected so as to have two or three buds above where the knife is to be inserted, to prepare it for the operation; a slip is cut off the end of the scion, sloping it to the bottom, as long as it is decided to insert it into the stock. On each side of the cut, as far as it extends, a part of the bark is to be taken off, leaving the under part broader than the upper, on which upper or back part I always contrive to leave a bud. The stock or branch to be worked is thus prepared: — Being first cut off, smooth and straight; two parallel slits, distant from each other nearly the width of the scion, and the length of its cut part, are then made in the bark of the branch, observing particularly to slope the knife so that the under edge of the cut next the wood may be wider than the outer edge. The piece of bark between the slits must then be taken out, separating it at the bottom by a horizontal cut. The scion will then slide into the dovetail groove thus formed, and, if the work is well performed, will fit neatly and tightly. A small quantity of the grafting clay should then be carefully applied, securing it on with list or any other convenient bandage, fastening it at the end with two small nails. The top of the stock should be entirely covered with the clay, sloping it well up to the grafts, and should be examined often, to see if any cracks or openings appear, which should be immediately filled up with some very soft clay.

When very large branches are to be grafted, or trees headed entirely off, I would advise three or more scions to be inserted, equidistant, round the stock. By this arrangement, the sap will ascend equally on all sides, and preserve every part of the stock from decay.

The proper time for performing the operation is from the beginning of April till the middle of May, or earlier, if the sap is in motion. The grafts, or scions, should be taken off in the winter months, but not later than February. They are then to be put into the earth about one third of their length, in a cool moist situation. By this mode of treatment, apple and pear, &c., cuttings may be kept till June, and may be even then grafted with success. I am, Sir, &c. — *Edmund Malone, C.M.H.S. Osberton, April 29.* 1831.

Mr. Thom's Machine for transplanting (p. 29. figs. 5. and 6.), *and his Mode of supporting newly transplanted Trees* (p. 445). — Sir, I presume that to ascertain the merits or demerits, or the intrinsic value, of any article in your Magazine, it must be tested by some criterion of utility, such as its fitness or unfitness for the general improvement of gardeners:

indeed, I apprehend that, unless some such rule be adopted and adhered to, the Gardener's Magazine will ultimately exhibit a most astounding and disproportionate number of comparatively useless and anomalous subjects; for I grieve to observe that the moment you are so good-natured as to insert the nonsense one person may recommend, such as, for instance, " brewing small beer," he, forsooth, must immediately after have the monstrous presumption to write upon another subject — ay, and a subject, too, which it would indeed be the quintessence of absurdity to suppose that any man could possibly understand, unless he were one of the select and privileged few who are " deeply read in classic lore." This luckless wight, I observe, has had the impertinence to make use of a very hard word, for which he has been very properly snubbed; physiology, I think, it is called: but as both the Russian and Polish words are very hard, and of course classic, I do not pretend to say that I have spelled the word properly, for I have of late been sadly puzzled with them. Then, again, because another person can adroitly draw a tooth, he also has the extreme vanity to suppose that he can, with equal dexterity, draw upon the patience of your readers, even unto the appalling number of some half-score octavo pages, upon " props and stakes " (whether patent or not I know not, but I have heard of such things); while he then and there learnedly and minutely expounds, with mathematical precision, every line and angle of greater or less resistance, from the horizontal to the diagonal, up to the perpendicular, in which these said props and stakes can be most advantageously placed for the support of newly transplanted trees. Why, my good Sir, if you allow such " faultless monsters" to continue their career much longer, we shall very soon have mathematical demonstrations, with diagrams of course, of the force with which a hammer ought to *impinge* on the head of a nail to drive it into a bit of mortar; or, what would be equally laudable and scientific, an algebraic formula for the cut of a broomstick. And such things, I fear, would be too much even for the most gullible of your subscribers.

I have been led into these desultory remarks from observing some papers in your late Numbers, written in a tone of vanity and presumption, which I should have considered unbecoming the gentleman and scholar. One correspondent gives us a " description and use (ludicrously enough) of a machine for transplanting large trees and shrubs," which might have sunk into merited oblivion had he not made it a vehicle for conveying a slanderous imputation on the character of probably some worthy man, who, seeing the folly of using such a fantastic gewgaw, most likely adopted this mode (feigning sheer ignorance) of ridding himself of his tormentor. If not, the inference is, I think, tolerably clear, that the writer has voluntarily constituted himself a worthy coadjutor of Sir Henry Steuart, in stigmatising the whole brotherhood as obstinately " ignorant and self-sufficient;" for it is incredible that any man, with the least pretensions to the name of a gardener, could either mistake the mode of applying this machine, or its utter uselessness for practical purposes. In the last Number the same gentleman has concocted a marvellously elongated article on propping trees, and, like a spoiled child, has fallen foul of both friends and foes; even his renowned friend of Allanton is visited with a severe castigation: while so profoundly astute and extensive is his erudition, that a poor unfortunate and nameless small-beer critic cannot escape a flagellation from the pestle hand of this chivalrous doctor, who seems as doggedly determined to set aside the ordinary rules of common sense in rural affairs, as his incomparable prototype of blood-letting, water-drinking celebrity was in " the healing art;" for he has in this Number, in all the pride of learning, contrived to stilt over no less than ten pages, merely to tell us how a newly transplanted tree ought to be propped, which Gorrie or Howden would have explained in less than as many lines. Is this, then, the way in which working gardeners are to be treated? and are they to submit to have such egregious nonsense palmed upon them, as scientific investigation, without remonstrating? I know what the responses of my fellow-labourers will be. Let not, then, this gentleman suppose that because he has been so fortunate in the chapter of accidents, and through no merit of his own, as to obtain a superior education, which enables him to string together a few truisms, to produce now and then a striking antithesis, or to round a period cleverly, it is not because he is enabled to excel in these things that he is to be permitted to carp at, and trample upon, with impunity, the humble pretensions of less fortunate men, who are nevertheless his equals in all the essentials of real worth and manhood. What are the grounds upon which this writer claims the favour of your readers? Upon two methods of propping trees. The one he himself, with all its variations, avows to be "bad;" the variations being, in fact, but clumsy modifications of the old three-stake triangular method. The other he modestly sets down as his own discovery, of which all other men were ignorant; and as such it might have passed with some of your juvenile readers, had not you mischievously stated at the bottom of the page, that that naughty man, Mr. Paxton, had already practised this *newly discovered method* at Chatsworth; so that, in point of fact, it was no discovery at all. Here, then, of the ten pages so elaborately written, one half are "bad," and the other mere moonshine. Please to present my compliments to Mister Wamba, son of Witless (p. 508.), and tell him I fear his case is hopeless. I am, Sir, yours, &c.— *J. Elles. Palace Gardens, Armagh, August* 6. 1831.

Desultory Remarks on some Articles in the June Number of the Magazine. — Sir, I beg to offer a few desultory remarks on your June Number. Although they do not tend immediately to the improvement of gardening, they may, perhaps, by their indirect tendency, obtain the notice of gardeners.

Heath-mould, and Peat or Bog Earth. First, then, to the proper discrimination which J. D. has made (p. 285.) between heath mould and bog earth. I perfectly agree with him in all his lavish praise of heath mould for the purposes stated, but must enter my caveat against his sweeping conclusion, that, "while heath mould is most important to the gardener, peat is not only totally unfit for, but even inimical to, most of the purposes of horticulture." It is, however, right for us, when we cannot obtain the best thing, to endeavour to obtain the next best; and, after the best thing, natural heath mould, I hold, because experience has convinced many as well as myself, that our next best is artificial heath mould. Before I enter on the composition of the artificial, it may be right to examine the natural matter. Natural heath mould generally covers tracts of country where the subsurface is formed by the debris of rocks swept down by some great power of water, or on decomposing rocks which apparently have their present composition by the agency of fire: these surfaces are covered by a thin layer of mould, composed of the sand of the rocks, and the decomposed and decomposing fibre of plants which lived and died on them. The proportions of this surface are commonly two parts of siliceous and earthy matter, and one of mould and decomposing vegetable fibre. Bog earth occurs in the same situations as heath mould, but as frequently in more fertile tracks; but wherever it does occur, it arises from the hinderance to the drainage or free flow of water: here vegetation is more vigorous, and the decay of vegetable matter goes on in a greater proportion, until a thick surface of decomposed and decomposing vegetable fibre is raised. The habit of the plants which flourish in this mass tends to its increase. Now, in both cases we have the same essential substance, decayed vegetable fibre, but in the latter the sandy matter is wanting, and occasionally the pure mould. How, then, are we to imitate the heath mould? Simply by taking the proportions of bog mould, sand, and loam, which we find in the heath mould, and, if well mixed, it will be found that plants which require heath mould will do equally well in this compound. For all the purposes of a promiscuous flower-garden bog mould with me is indispensable: my flowers, according to my neighbours' report, look more healthy than theirs; and, when asked for my method, I refer them to the peat. It keeps the ground tight, admits, and above all retains, moisture. There are few plants with which it does not agree. [Mr. Walker (p. 706.) attests the absurdity of denominating as "bog earth" the natural soil of American plants. — *J. D*]

Iron Stakes for supporting Rose Plants, &c. I perfectly agree with Mr. Hislop (p. 284.) in the economy, beauty, and safety of iron rods for tall flower stems and shrubs, but I would not recommend his poker-like shape. I had some made two years ago, according to that fashion, but found them frequently give way, or bend, in a storm of wind. The simple six-feet rod, of any required thickness, can be purchased and fashioned by any village blacksmith, and will be found to answer every purpose. We must not forget, that the more simple and unpretending the support, the more we admire the flower, and neglect the art which has attended it. — *E. S. July.*

Remarks confirmatory and critical on some Articles in the Gardener's Magazine. — Sir, I cannot help remarking how much my opinion coincides with certain parts of your Magazine which I have read; and thinking, as you do, that we ought not to conceal any thing we may discover which may be useful to others, particularly when disclosing it does no injury to ourselves, I beg space for a few observations.

Planting Potatoes whole (Vol. V. p. 294-5. 718—722.). — I quite agree with Mr. T. A. Knight in planting potatoes whole. As a testimony, I will state an experiment of mine in 1828. I planted four plants containing two eyes to each; four, the crowns containing perhaps five or six eyes each; four small whole potatoes (what are here termed chats); four large whole ones (or what are termed Ware potatoes). Now for the weight of the produce of each kind: the produce of the first four roots weighed 8 lbs.; that of the second four, 11 lbs.; that of the third four, 15 lbs.; that of the fourth four, 16 lbs. I think this will make clear to any one that the reverse of what is generally followed ought to be practised; namely, to plant crowns or whole potatoes in lieu of a plant with two eyes. This is even the second trial I have made, and found it the same; but I was not so particular in the first experiment as in the second, having determined by my eye, the difference was so obvious. I think this of the greatest importance to the agriculturist. If it holds good for an acre, what a difference in the produce! The object of a little extra-seed bears no comparison to the extra-produce; and, besides, the labour of cutting is saved.

Light Arable Soils may be too much pulverised. I quite agree (from experience) with Mr. Wallace (Vol. VII. p. 336.) in thinking light soil sometimes injured, rather than improved, by too much digging, &c. I have for some years adopted the plan of sowing August turnips on ground hoed and raked, in preference to digging: provided the ground be in good heart, and not too much bound, I find the seed vegetates much sooner, and is less infested with the fly; and, as the plants grow faster, and bid defiance to the fly, they make less top, but better roots.

Mr. D. D. Neeve's Meridian Pits (Vol. VII. p. 289—292.). I cannot help saying, that my experience, and that of two or three of my acquaintances, are quite contradictory to Mr. D. D. Neeve's position, that dung excluded from the external atmosphere will heat the better: I find it quite the reverse. I know two persons who have been induced to build pits for melons, &c., with a chamber under for dung, but failed in obtaining sufficient heat after two or three days; and they informed me that they had observed that the very person who had even written in favour of this plan always had external linings; which is a proof his chamber did not answer the end intended. I, this season, built a pit for heating, with a chamber; but with the precaution to enable myself to make holes and apply external linings: these I soon found to be necessary. I have even before now had the tops of my linings covered, to keep them dry, but soon found they were wetter, and that the dung decomposed much quicker, than when exposed: the reason I think is obvious; all the gas which was produced by fermentation was confined, and was the cause of rapid decomposition; quite the reverse of what I expected. I conjecture (but perhaps wrongly) that the dung, when in a chamber, is deprived of the oxygen which abounds in the external atmosphere; and that this is the cause of the fermentation ceasing; in the same manner as flame will become extinguished, and animals become suffocated, from the want of oxygen. I am, Sir, yours, &c. — *J. D. Parks. Dartford Nursery, Dartford, Kent, June* 20. 1831.

Prizes for Fruits. — Veritas, who dates from Charles Street, Covent Garden, recommends to us to warn our readers, that the premiums given for fruits by the Horticultural Society of London are not to be considered as given for the best fruits that can be grown, but rather for the best that happen to be presented at the time; and that those medals given in June last, and recorded in p. 510., are to be considered as a sort of honorary payment for helping out the dessert given at the fête. Veritas has prepared a paragraph on this subject; but, as it is rather severe, we cannot publish it unless he will give his real name. — *Cond.*

History of the Lombardy Poplar (*Pópulus dilatàta*). — Mr. Masters, in his *Hórtus Durovérni*, or catalogue of the plants cultivated in his nursery at Canterbury, published 1831, says, in a note on p. 57.: — "The common Lombardy or Po poplar was introduced in 1758. One of the original importation was planted in the nursery; it is still standing, and has acquired a growth of nearly 100 ft." [in height]. A communication in Vol. VI. p. 419., on this subject, dates its introduction to St. Osyth, Essex, 1751, seven years anterior to the time mentioned by Mr. Masters. We notice this remark in the hope of eliciting from Mr. Masters additional circumstances appertaining to the history of this interesting tree; and we shall be glad to learn whether the above tree is male or female: it will bloom in March and April. The wood of the poplar is remarkably light when dry, and is usually but lightly esteemed; for in-door purposes it is, however, said to be excellent. Hence the following couplet appertaining to it: —

> "Though heart of oak be e'er so stout,
> *Keep me dry*, and I'll see him out."

We believe we have been told that poplar wood, moreover, ignites very slowly; and that it is, therefore, very eligible for the floors of cottage-chambers, and like purposes. — *J. D.*

Dáhlia, Georgìna, Geórgia. — Sir, I perceive you prefer the second term to the first; the third is more accurate than either, and is employed by Sprengel in his ninth edition of *Linnæus's Génera Plantàrum.* The name of the botanist complimented is Georgi, not Georgin. — *W. Hamilton. Plymouth, Oct.* 5. 1831. The principle adopted by our correspondent is unquestionably the correct one; but Willdenow, who devised the name Georg*ìna*, probably made it Georg*ìna* rather than Geórg*ia*, intentionally, to prevent its being confused with the country Georgia, whence some, in consequence of the name, might suppose the plants to have been obtained: they are from Mexico. Decandolle having adopted Georg*ìna*, we trust Dr. Hamilton will do so too; the more especially, as, during our late tour in the north of England and west of Scotland, we found it very generally taking the place of Dáhl*ia*. — *Cond.*

Packing Florists' Flowers, and the Advantage of keeping them in the Dark for two or three Days previous to exhibiting them for Competition. — Sir, At p. 498. you recommend my mode of packing flowers; which, had you given a section of the box, would, I think, have been better understood. Packing flowers in this way improves the beauty of the flower, by keeping it in darkness for two or three days. Perhaps you are not aware that the Lancashire florists cut their flowers three or four days before the show, and

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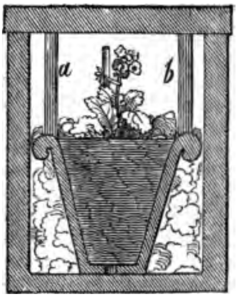

place them in a dark cellar, changing the water in which they are kept. Flowers shown in pots are kept in darkness in the same way, which improves their colour wonderfully. I have no doubt, that, if you had seen the polyanthus when packed, you would not have considered it the same flower, when unpacked. For this mode of packing, a light box (*fig.* 127.) is made to fit the pot, with a little moss round the pot to prevent it breaking, and a little tied over the top to prevent the earth from falling out. Two round pieces of wood (*a*, *b*) are nailed to the lid, to keep the pot in its place; and in unpacking there is no difficulty, as the pieces come up with the lid, and the flower is tied to a small stick in the pot. — *M. Saul. Sulyard Street, Lancaster, August* 6. 1831.

Culture of C*ýclamen vérnum and repándum.* — Sir, With reference to Mr. Housman's communication on the cultivation of *C*ýclamen còum (p. 561.), and also the remarks of J. D. (p. 562.), I am surprised that neither of them has adverted to two other species, equally beautiful, and deserving of cultivation: I allude to *C.* vérnum and repándum, the latter of which is exceedingly fragrant, and not surpassed in beauty by any of the species. *C.* vérnum is very similar to *C.* còum in habit and colour; but differs, in having a leaf variegated, somewhat like that of *C.* pérsicum: the corolla is rather darker, and the peduncles shorter; and, as far as my observation has gone, I should say that it blooms more abundantly than *C.* còum. With respect to the fragrancy of this genus, I have found, that, of the *C.* pérsicum, some are sweet, and some have no scent whatever; of the *C. h*ederæfòlium, I never found one that was sweet-scented, although there are several varieties. The *C.* còum and vérnum have no scent, but *C.* europæ'um is highly fragrant. I have endeavoured to cross the *C.* pérsicum with the *C.* repándum, and also the *C.* còum and *C.* vérnum; but with what success I am not able to tell, the roots not having yet flowered: but should I observe any variation, I shall be very happy to communicate it to you. The peduncles of all the species, as far as my observation goes, become spiral as soon as the germen begins to enlarge. Those of *C.* pérsicum are less spiral than those of the other species.

I fully agree with J. D., that there is no genus more deserving of attention than the *C*ýclamen, both as to its beauty and the duration of the flowers; for, with a very little care, it is possible to have some of the species in bloom every month throughout the year. It is, therefore, extraordinary that so little attention should be given to the cultivation of the cyclamens; indeed, I fear that this genus, like many others, is sacrificed to the rage for variety. I am, Sir, yours, &c. — *E. London, Oct.* 5. 1831.

Indigenous E*ricæ and the Varieties of* P*olýgala vulgàris.* — Sir, I thank Mr. Bree for his reply (p. 379.) to my queries (p. 246.) on these subjects. I agree with Mr. Bree that they were hardly worth asking "in print." When I asked them, I had not, however, books to consult, but have since procured some; and have also since found several varieties of *E*rica vulgàris, such as mentioned in your *Hórtus Británnicus*, and an abundance of both *E*rica *T*étralix and *E.* cinèrea.

I think Mr. Bree mistakes my meaning as to *P*olýgala vulgàris. I have read in some book (I forget the title) that the flowers of *P*olýgala vulgàris are changeable, and that flowers have been found of several colours on the same plant; but this I never saw. The sense of my query as to the different colours of the flowers of *P*olýgala vulgàris is this: — Are these four distinct varieties (not species)? or are they all one, and the flowers changeable in colour? If so, what is the cause of the change of the colour?

Mr. Bree says they are doubtless mere varieties of one and the same species; which I believe is the case. I have lately devoted much of my spare time to searching out the beauties of Flora, and I find it a very amusing and instructive employment. A few days ago I found a variety of *Bet*ónica officinàlis with white flowers. I do not see it mentioned in your *Hórtus Británnicus.* Is it generally known that there is such a plant? — *G. J. P. July* 15. 1831. [Yes. See Smith's *English Flora,* vol. iii. p. 97. — *J. D.*]

The conductor's *Hórtus Británnicus* exhibits eight varieties of *E*rìca vulgàris, three of *E. T*étralix, five of *E.* cinèrea, and three of *E.* vàgans; that is, reckoning in each case the species itself, as it is called, as one variety. Mr. Bree, in his enumeration of the species (p. 379, 380.), also adverts to some of these varieties, and mentions a pale-flowered and a purplish-flowered variety of *E.* vàgans. As both these are additional to the nineteen varieties quoted above from *Hórtus Británnicus,* they, with these nineteen, and *E.* ciliàris and *E.* mediterrànea, the two species recently added to the British flora, render our British heaths twenty-three in number.

The plant called Menziès*ia p*olifòlia, or Irish heath, is probably neither a Menziès*ia* nor an *E*rìca, although it has, in its time, with the Scottish species, M. cærùlea, been associated with both genera. The type of the genus Menziès*ia* is M. ferrugínea; this, with another genuine species, M. globulàris, is from North America, and both are so dissimilar to M. *p*olifòlia and M. cærùlea in habit, and, I believe, in the structure of the seeds also, that the latter cannot, in these days of botanic reformation, long remain associated with the former. Of M. *p*olifòlia, as it must at present be called, there are six varieties; one of which, called nàna, is not rare in the nurseries (at Mr. Knight's for one), and is highly curious from its snug tufted habit. — *J. D.*

Wintering Vines grown under the Rafters in Pineries.—Sir, I noticed in your last two Numbers (p. 412. and 539.) a mode for wintering the vines grown under the rafters in pineries; and as it seems to be sent forth as something new [not as new, but as being well worthy particular commendation and adoption], I think it proper to inform you that it has been practised for a number of years in old-constructed houses, where the front sashes run in a slide, by Mr. Tinker, gardener to Sir John Ramsden, Bart., of Byram, in Yorkshire. Mr. Tinker turns down the vines, when he thinks it proper to do so; ties them as close as possible to the front; takes the front sashes and sets them on the front flue, raising them to their usual height with bricks, or any other material that may offer itself, making all vacancies air-tight with boards and moss. I am, Sir, yours, &c. — *John Pearson. Kinlet Gardens, near Bewdley, Sept.* 2. 1831.

The Impregnation of Cùcumis *satìvus by the Maltese Melon.* — Sir, The attainment of truth, and not the support of any peculiar or favourite theory, being ever the object to which my endeavours point, I am anxious to know from Mr. Oliver the result of his experience on the impregnation of the Cùcumis satìvus by the Maltese melon, as alluded to by your correspondent P. Lauder (p. 622.); to whom my thanks are due, not only for again adverting to the subject, but also for the complimentary manner in which he has mentioned my former communication.

Of course, I cannot be expected to relinquish, without some further evidence to warrant it, my opinion, adopted after mature consideration, and supported by a series of careful experiments (though these are but negative proofs, I admit); the conclusion arrived at being, moreover, in opposition both to my preconceived ideas and sanguine anticipations, and we being but too ready to credit that which we wish. Believing, in the outset of my experiments, that such fecundations were not only practicable, but even to be avoided with difficulty, and supported in that belief by every book on the subject of gardening which I consulted, I commenced with an undoubting impression that, by continually crossing and recrossing between the hybrids obtained, and again between those and the original parents, I might, in the end, obtain individuals possessing the hardiness of habits of the cucumber or even gourd, and at the same time producing fruit with the delicious flavour of the melon; and dire experience alone has convinced me how erroneous were my principles, how futile my anticipations.

Nevertheless, if Mr. Oliver will favour me, through the medium of your periodical, with an account of his experiments, I shall, in the event of their proving satisfactory, become a *willing* convert to contrary opinions to those I now hold; for, though I have remained satisfied without further prosecuting my trials, unless on individuals which seem to approach nearly, as in the case of the new regent melon (a variety I have just received, which, by the fruit, can scarcely be distinguished from the cucumber, and on which I purpose renewing my endeavours), yet, between the less known and cultivated genera and species, I have not quite relinquished the hope that some two perfectly different ones may be found to break the hitherto impassable boundary.* Should this be once effected, the principle may, at least with the two immediate parents and their congeners, be carried to infinity; and even, possibly, through their means, a link might be established whereby a junction of the whole family might be brought about.

I have, this present season, been attempting such hybridisation between a cucurbitaceous plant † (hitherto, I believe, unknown in this country) and the cucumber, melon, gourd, and water melon respectively, as yet without success; but I am sorry to have to avow, that I am prevented from rendering my experiments as various as I could wish, by my inability to procure seeds of the different individuals of the family. Only a very few are to be purchased; and with respect to those I have been able to obtain in this way, I have found ample cause to complain of similar treatment to that so justly reprehended by your correspondent K. (not myself, I assure you) at p. 617., and that, too, from the same quarter which you have so frequently and so strongly recommended. For instance, for *M*elóthria péndula I received *C*ucúrbita lagenària; for Trichosánthes anguìna, a long variety of the melon; for *S*ícyos angulàtus, a variety of the gourd, &c.

My appeal to the horticultural world (Vol. VI. p. 503.) has been unheeded, save in two or three *signal* instances; the most prominent of which, I am sure my countrymen will blush to hear, was that of a French gentleman resident in Paris. I had intended, ere this, to have requested your insertion of an amended, and, in some points, more extensive list of species and varieties; but it would be filling your pages to no purpose, if not attended with better success than accrued from the last.

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* I think the *C*ùcumis *Dudàim*, *M*èlo, Châte, osmocárpon, and flexuòsus, can scarcely (especially the first four) be considered any thing more than mere varieties; but this is a matter which cannot be determined until it is more distinctly defined what constitutes a distinct genus or species. Assuredly, in a *sexual* system with any pretensions to perfection, the genera and species should be arranged according to their capability or incapability of reciprocal impregnation: either a genus ought to consist of species, all of which mutually fecundate each other, or of those which, otherwise analogous, are incapable of so doing; while those which are *so* capable should be classed as varieties.

† A species of the Benincàsa, trivially termed cylíndrica, from the form of its fruit, of which I have cut a specimen weighing 19 lbs. and measuring round 2 ft. 6 in., while the girth, longitudinally, was 3 ft. 6 in. It is covered all over with a white powder, similar to that which has given the name of cerífera to the other species, which is the only one given in Loudon's *Hórtus Británnicus*. This powder comes off on being touched, in the same manner as white paint does when long exposed to the weather; it is also covered with hairs about a quarter of an inch long, which are so sharp as to penetrate the skin and cause an irritating and smarting pain.

If Mr. Oliver will oblige me with seeds of his hybrid (Vol. IV. p. 514.), I will commission a friend in Newbury to call on him for them. I shall also feel much obliged if he will have the goodness to state whether he remarked any change produced in the foliage; for in all the strange accounts I have heard of melons being impregnated with gourds, I could never learn that the foliage of the offspring was at all affected, which, of course, would be a natural consequence. I have only to add that Mr. Oliver, or, indeed, any horticulturist who may be desirous thereof, shall be heartily welcome to any of my numerous collection.

Unless Mr. Mallett can adduce some proof of the influence of the gourd in the progeny obtained from his experiments (Vol. VII. p. 87.), such as a variation in the foliage and *seeds*, &c., it must be considered, as far as it regards the question in dispute, wholly nugatory. I should have been glad to judge for myself, had Mr. Charlwood, as he ought to have done, sent me a few of the seeds left with him for distribution. — *J. C. K. Levant Lodge, Oct.* 12. 1831.

ART. VII. *Queries and Answers.*

ILLUSTRATIONS of Landscape-Gardening. — Several correspondents have enquired for Part III. of this work, and also whether, as it is a losing concern, we mean to continue it. We answer, that we shall, in the course of 1832, publish a third and concluding Part of the *Illustrations* in the present folio form of that work, with titlepage, index, &c., so as to render it complete. Previously to this, however, we shall commence a new series of *Illustrations* in the quarto form, so as to be more portable. We shall always, as far as it can be done by wood-cuts, give the essence of these *Illustrations*, whether folio or quarto, in the *Gardener's Magazine*, so that no readers of that work need purchase the *Illustrations*, unless they take a particular interest in the subject. We mention this, because, from the nature of the work, it is impossible that we can ever derive any profit from it; and indeed it would be impossible for us to publish it at all, if we had not a draughtsman and lithographic artist in our office, at any rate, for other purposes. Part I. of the new or quarto series of *Illustrations* will appear on Feb. 1., and will contain our plan for the Birmingham Garden, with its description. — *Cond.*

On the Management of Suburban Gardens. — Sir, Excellently as your Magazine is conducted, allow me to say, that, by the consideration of one style or line of gardening, which at present you do not attend to, you might insure the thanks of many subscribers. You are, it is true, sufficiently diffuse and explanatory in your directions for gardens in the country, but you do not give any hints to the unhappy resident in cities, how he may enjoy a few even of those favours in which the country gardener revels. To those who are surrounded with a fine atmosphere, whose houses supply them with muck, and whose pockets supply them with money to purchase every whim or help, little exertion or solicitude is requisite, in comparison with that demanded of the inhabitant of the city, who would make one plant grow where plant never grew before. The former person has only to plunge a piece of vegetating stick into the ground; earth, air, and water come at his call, and soon this stick becomes a flowering shrub: but the unhappy cockney gardener purchases a plant at a high price, he gets soil, he waters, and, though he is visited now and then only by a salubrious gale, he finds his plants, just by striving, live; his lawn looks dirty and damp, and his plants throw up no healthy shoots. Of course, in situations where neither air nor sun can ever come, it would be madness to endeavour to garden; but in exposed situations, though even visited by the smoke of manufactories, surely much may yet be done. I have been able to get to blow at last (two flowers only) the *Gentiàna* acaúlis, which Curtis says never flowers near the city. Now, I live close to the city; but, Sir, what we wish most to be informed of, is as follows: — How to get the *Ròsa* índica higher than 2 ft.; how to make the various fuchsias flower in the open border. Query, by thinning the shoots? this I have done, but to no purpose. How to get good georginas. Mine, as soon as they are budding, are eaten to a cobweb, yet no insect can I see, except once or twice a green fly. Will pelargoniums strike by merely cutting them as usual, and, after potting them, putting them on a high shelf in the green-house; I mean without making a regular hot-bed for them? Answers to these queries will not only confer a favour on the lovers of gardening in cities, but mightily encourage that business, which is at present retarded by disappointment and want of success in the employer. I am, Sir, yours, &c. — *A would-be Suburban Gardener. July,* 1831.

The small Brown Scale, which infests the Fruit and Branches of Fruit Trees. — Sir, at p. 378, 379. are some useful enquiries and remarks on two insects which infest fruit trees. The one which is described as a small brown scale, pointed at both ends, and smaller than flax seed, is very prevalent here on the pear trees, to which I take it to be injurious, and especially to the fruit; by clinging to the rind (in the manner described p. 379.) it prevents the fruit swelling to its full size. I wish some brother gardener, versed in entomology, would communicate its name and history, and withal, if he can, the readiest and most effective means of prevention or destruction. *W. D. Dorfold, near Nantwich, Cheshire, August* 30. 1831.

We refer our friend W. D. to Murray's excellent article on the blight of the hop, p. 332., for the explanation of a sentiment we have some time entertained; namely, that, in many cases, insects follow disease in vegetables, not occasion it. — *J. D.*

A small grey Grub which devours Carrots. — In this quarter the horticulturists are complaining of a most voracious grey grub; so numerous as to be devouring the carrots by acres. They are about a quarter of an inch in length, and about the girth of a farthing pin. They are not the least affected by lime-water, or any other solution that has yet been tried. The gardeners, in consequence, employ a number of hands provided with small cans, who repair to the most infected fields before sunrise, where they are crawling on the surface in myriads, and they pick them up and destroy them afterwards. It appears that they are weakened and rendered harmless by drought; for they are seldom seen after sunrise, and within those few days, since the weather has become warm, few of them have been observed. (*Scotsman,* May 14.) Wherever lime-water fails, tobacco-water is sure to succeed, and should be used before sunrise. This grub, or one answering very much to the above description, is not uncommon among carrots in England; but we never heard of any remedy for it, except the removal of the diseased plants. Another season we should be glad of a few from Edinburgh, put in a box with some earth. We should then, in all probability, be able to discover the family or generic name of the insect, if not its specific name, and, in consequence, something of its history; and such knowledge can alone be depended on for leading to a preventive for the future, or a palliative during the ravages of the insect. Probably, however, some of our readers can give us the information desired, or some portion of it; and this we shall be most happy to receive. (See p. 336.) — *Cond.*

Cause and Cure of the American Blight; in answer to Judge Buel (p. 319.). — Sir, Your respectable correspondent, Jesse Buel, Esq., treating of trees and their diseases (which, however, are but imperfectly described), solicits information respecting the causes of these diseases and their cures. He says: — "We have lost many of our pear trees by what is here termed the blight." Now, what our English gardeners describe as the "American blight," and which here particularly affects apple and pear trees, is evidently the larvæ of some insect, enveloped in a substance like white cotton, but which larvæ, I suspect, are the consequence, and not the cause, of the disease he writes upon; that is, I believe that the blight never fixes, except upon parts of a tree where the sap has exuded through or under the bark, or where the tree has been cut or bruised, and has put on the appearance he describes; viz. "the bark becomes dead in irregular blotches, contracts, and ultimately separates from the wood." He says farther: — "Any thing you can offer upon the subject of the preceding remarks will be particularly interesting to your American readers." This leads me to mention, that, about twenty-five years since, I planted on the east border of my garden, which was all newly-raised land, a row of apple and pear trees, chiefly the former; and I found that they all soon became affected with the disease above described. The subsoil being (particularly in winter) a morass, I planted the trees as high as possible; but some plants of the same kind, and from the same nursery, planted in another and drier situation, being exempt from the disease, I considered that the other trees had become affected from the absorption by the roots of too much moisture. To obviate this, I planted within 3 or 4 ft. of them a row of willow stakes, which soon became bushes, and now are trees. I could in a short time trace the roots of these willows completely under the fruit trees, and as thick, generally, as a mat. I began, consequently, to fear they would ultimately destroy them; but I was agreeably surprised by finding, from the period the roots of the willows became intermixed with those of the apple and pear trees, that the disease in the fruit trees gradually, and I may say entirely, disappeared, and for the last twenty years they have borne plenty of fine fruit. Now, as Judge Buel considers his trees to be thus diseased, from the elaborated sap, and to be most prejudiced in wet seasons, I think I am justified in supposing we both allude to the same disease, and I shall be most happy if the remedial hint here given should prove successful in America. As I am writing on the subject of fruit trees, I shall close my subject by asking a question. In a Gansell's bergamot pear tree, bearing this year its first three pears, the fruit has each a leaf growing from its centre, or nearly so. Is this a *lusus naturæ*, or has the like fallen within your observation? — *Robert Camell, M.D. Bungay, Sept.* 20. 1831.

The case mentioned is a *lusus naturæ* of common occurrence (see Vol. IV. p. 262.); and the leaves appear to be a modification of the calyx, conformably to the modern doctrine, of all the parts of a plant being resolvable into an axis, buds, and leaves. See Lindley's *Outlines*, &c.—*Cond.*

How to destroy the Dandelion. — I have a field which was broken up formerly, very badly laid down, and which has been neglected since. I lately covered it with a quantity of coalashes, and it is now one mass of dandelions. The soil is a loose sharp gravel, and I am almost afraid to break t up again. How can I kill or eradicate these weeds? — or what will eat hem? — *X. Y. London, Aug.* 29. 1831.

Catalogues of acclimated Plants. — One of your correspondents makes an excellent proposal, that cultivators of exotic plants shall, from time to time, communicate to each other, and to the public, through the medium of your Magazine, a catalogue of such plants as they shall have been able respectively to acclimatise. As I have a fondness for attempting to naturalise exotics, and am anxious to give information on that head, I shall be willing to offer my mite of observation to the public service, if you think you can persuade some others of your correspondents to do the same. I am, Sir, yours, &c. — *Causidicus. Dec.*, 1830.

We shall be happy to receive the catalogue alluded to by Causidicus, and earnestly invite correspondents in every part of the country to send us similar lists. — *Cond.*

A Machine for sweeping Streets is said, in some of the newspapers, to have been recently invented at Boston, in the United States. If it be materially different from the machine for the same purpose, figured and described in a former volume (Vol. VI. p. 100.), we should be much gratified by receiving some account of it from J. M., Mr. C., Mr. W., or some other of our Boston correspondents. — *Cond.*

Laying out a Classical Residence. — Sir, In a former volume (Vol. VI. p. 226.), you recommended to the notice of your enquiring correspondent Romanus the ground-plan of Pliny's Laurentine Villa as affording hints for laying out a marine villa on the coast of Sussex. Allow me to request you will favour your readers with a plan of Pliny's Tuscan Villa, as affording hints for laying out a suburban residence where land is dear, and where it is desirable not to be overlooked. I am sure there are various other persons, and especially architects and their employers, who would profit from such a plan, as well as myself. I cannot help remarking on the singular circumstance of the aptitude of all the colonnades and porticoes in Pliny's plans to be changed for green-houses and conservatories. I am, Sir, your constant reader. — *Suburbanus Oxfordiensis. July,* 1831.

The following are the details of the plan required by our correspondent: —

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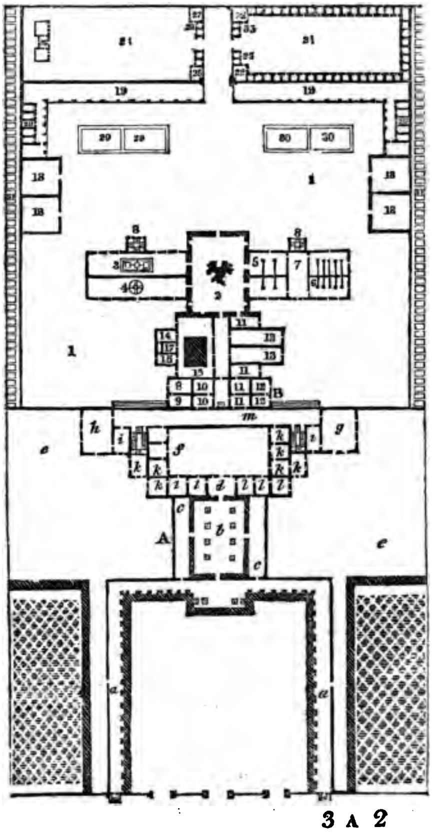

A, Prætorium, or villa urbana.
a, The peristyle.
b, Atrium, or hall.
c, Portico towards the palæstra.
d, Room called Tablinum.
e, Palæstra, walks, and orchard.
f, Inner court of the prætorium.
g, Summer dining-room.
h, Winter dining-room.
i, Withdrawing-rooms.
k, The winter apartments.
l, The summer apartments.
m, Portico.

B, Villa rustica, or farm-house.

1. The farm yard.
2. The kitchen.
3. Wine-press and cellar.
4. Oil-press and cellar.
5. Ox-stalls.
6. Stable.
7. Herdsmen and grooms.
8. Stairs to the granaries.
9. Procurator or bailiff's lodge.
10. Husbandman's lodge and tenements.
11. Housekeeper's lodge and tenements.
12. Master of the cattle.
13. Lodging-rooms for servants.
14. Bathing-room.
15. Warm room.
16. Sweating-room.
17. Miliarium to heat the water.
18. Storehouses for wood, hay, seed, &c.
19. Portico, or open sheds.
20. Hog-sties.
21. Sheep-fold.
22. Shepherd's lodge.
23. Shepherd's dog-kennels.
24. Aviary, or henyard.
25. Poulterer's lodge.
26. Gallinarium or hen-house
27. Porter's lodge.
28. Dog kennels.
29. Dunghills.
30. Pond in the farm-yard.
31. Beds of culinary vegetables.
32. Porter's lodge.
33. Dog-kennels.

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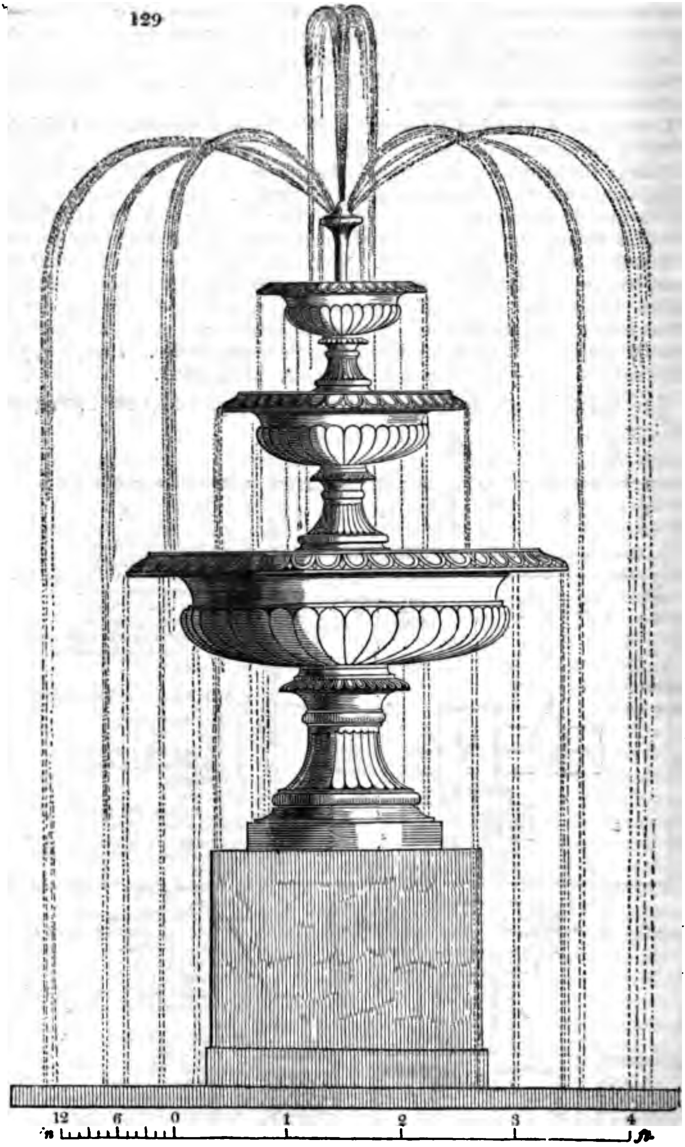

The Dumfries Sandstone suitable for Vases, Fountains, and other Garden Ornaments. — Sir, If the Dumfries stone is suitable for tombs, as from your account (p. 529.) it appears to be, why should we not have vases, fountains, and other garden ornaments of it, sent up to London by Whitehaven, at the same charge as the monuments? I enclose you a sketch (*fig.* 129.) of a fountain of artificial stone, 8 ft. high, for which I paid, to Messrs. Austin of the New Road, 15 guineas; and I would beg to ask, through the medium of your Magazine, your friend Walter Newall, Esq., what such a fountain would cost in Dumfries? I can only say, if it cost no more than the artificial stone fountain, it will evidently be preferable because incomparably more durable. Perhaps Mr. Newall could send you some drawings of vases, sundials, and other garden ornaments, with their dimensions, and their prices at Dumfries. — *O. P. Q. Dorking, Oct.*, 1831.

Plan of a Flower-Garden sent for our Opinion. — In consequence of the notice which we gave (p. 407.), some plans have been sent us for our opinion; and one or two for our opinion and a plan for remodelling, with no alteration in the walks or trees. One of these plans, by permission of the proprietor, we now submit (*fig.*130.); and we publish it as an exercise for the talents of young gardeners in laying out grounds. What we should wish is, first, opinions as to the defects or beauties of the plan, stated in few words (say, not exceeding a quarter of a page of this type); and, secondly, plans of the same size as the engraving, for altering or remodelling the beds in the plan submitted. The writing must be distinct, and the plans neatly drawn, but not coloured, in the same style as the engraving. (*fig.* 130.) All the information requisite to be given on our part is, that the surface is perfectly flat, without any distant prospect; that no water will be admitted, nor ornamental buildings; that the building represented in the left-hand corner is the dwelling-house; and that, to give an idea of the scale of the whole, the walks are 6 ft. wide. For the best opinion, we shall give Part I. of *Illustrations;* for the second, *Elementary Details of Pictorial Map-Drawing;* and, for the third, the *Cottage Manual.* For the best plan, Parts I. and II. of *Illustrations;* for the second, *Le Bon Jardinier,* or some book of equal value; and, for the third, Lempierre's *Popular Lectures on Natural History and the Sciences.* Opinions and plans to be given in before the 1st of May next, each with an assumed signature. — *Cond.*

The Balm of Gilead Fir does not grow to any size, or come to maturity, in this country. What can be the reason of this? It dies off sooner or later in all soils and situations, and it has a singular manner of dying; i. e. the sap forming blisters in the bark. What says Mr. Gorrie to this? He certainly has pointed out the principal cause of the rot in the larch, viz. "that the rotting roots of the Scotch pine form, at least, one powerful agent in promoting this disease," &c. From having never seen a promising second crop of larch or Scotch pines, I have been led to suppose that the soil had been exhausted, by the former crop, of the proper nutriment for any of the pine tribe. — *W. T. Aberdeenshire, July,* 1831.

The fittest Plants for a Hedge required to be at once useful and ornamental. — I have a desire to plant a hedge which shall be at once ornamental and useful, as a garden hedge, there being some, though not any very great, danger from cattle. I have been thinking that I might effect this by planting privet and roses at intervals: the roses would be to the privet what brambles are in common hedges. What sorts are the best? There is the *R*òsa índica, which grows very long, and would soon increase; there is also a Nepal white rose, which blossoms in bunches of small white flowers in the autumn, and is nearly evergreen. Do you think that they would answer? Or what would do better? I fear they are hardly thorny enough. — *X. Y. London, Aug.* 29. 1831.

Ivy-clad Timber. — Our excellent friend and correspondent, Mr. Bree, indirectly asks (p. 233.) whether we deem ivy harmless or hurtful to the trees it entwines. We defer our answer, for the pleasure of announcing that another valued correspondent is preparing for publication a work on British timber, in which the benefits and injuries arising to timber from ivy will be fully discussed. We are promised an extract on this subject, either from the sheets or manuscript of the work. — *Cond.*

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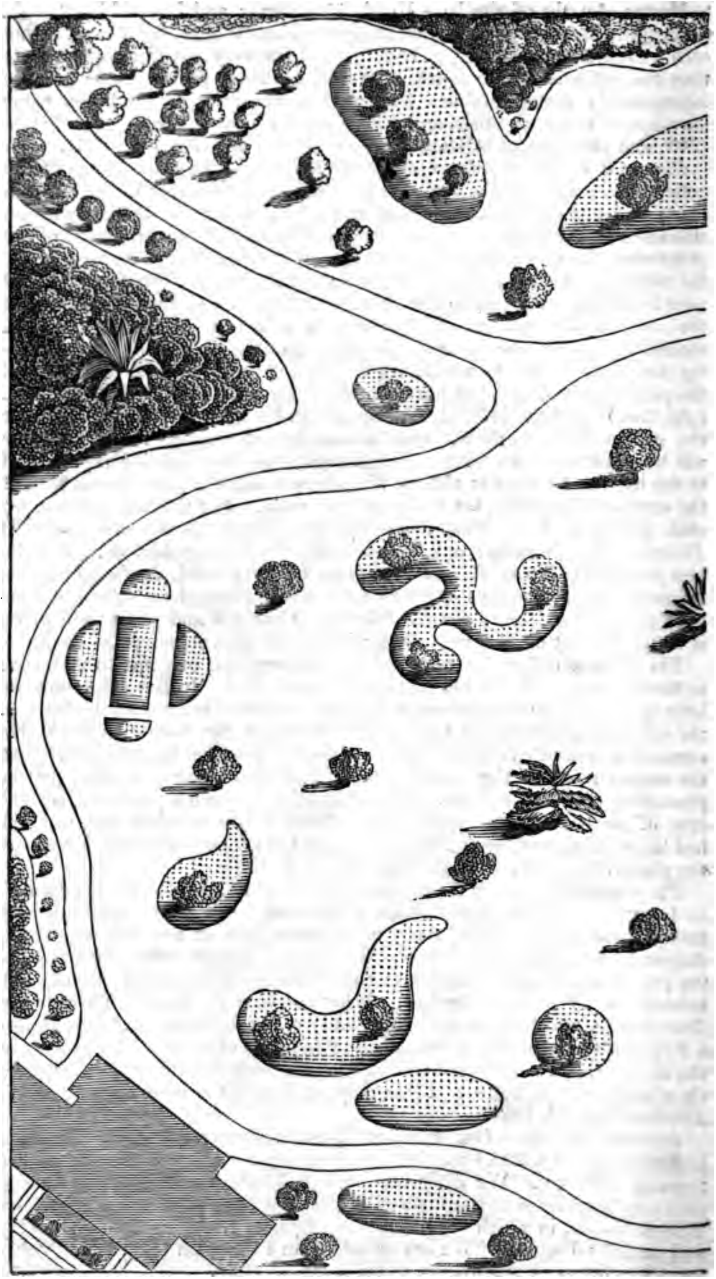

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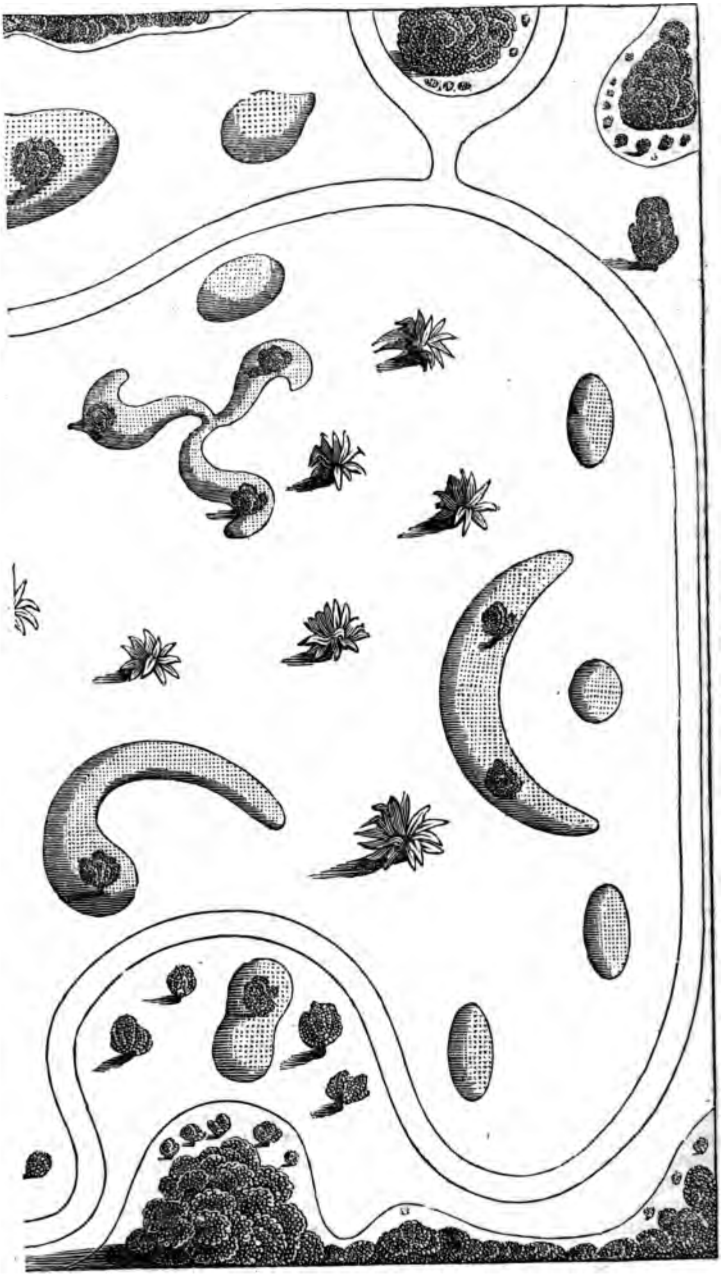

The Culture and Propagation of the Camellia. — Will any of your readers or contributors favour your publication with a clear and ample account of the propagation and culture of the Caméllia? If they would, I am sure it would tend to a more extended cultivation of this splendid family of evergreens, both in the open air and in conservatories and green-houses. I am, Sir, yours, &c., an old subscriber — *G. R. Sept.* 28. 1831.

The Culture of the Gentiàna *acaúlis* is desired by S. W. of North Brixton, Surrey; and the same lady wishes to know where she can procure the Lady Bath Heartsease. — *North Brixton, Surrey, Sept.* 16. 1831.

Scottish Roses as a Garden Hedge. — Do you think that the varieties of the Scottish rose would make a good garden hedge, or would they fill up the bottom of a whitethorn hedge which is become hollow? — *X. Y. London, Aug.* 29. 1831.

The Culture of Doryánthes excélsa to cause it to blossom. — Sir, Seeing in p. 492. that Mr. Henderson has succeeded in making the Doryánthes excélsa bloom at Glasgow, in Woodhall gardens, I beg leave to say that Mr. Henderson would confer a favour on me, and probably on many others, if he would state in what soil and in what temperature he cultivates it; whether under glass, and whether in a stove or in the open air, and if under glass then in what sized pots, and at what time of the year it makes its growth; for I have had a plant now for three years, and I am unable to make it advance either under a frame or in a green-house, though I have several times changed the soil; having tried it in rich loam, in sandy loam, and in peat with calcareous clay. I remain, Sir, yours, &c. — *Causidicus. Aug.* 22. 1831.

The Jacobæan Lily (*Amarýllis formosíssima*). — Has any reader known this plant to produce perfect seeds in this country, such as have produced young plants on being sown? Herbert, in his treatise on Amaryllíd*eæ*, where this plant is called Spreikèl*ia* formosíssima, says that he has never known it to seed in this country. Our correspondent Amaryllídeus, for whom we ask this question, had it apparently seeding in May last, but suffered its swelling ovarium to get injured by frost. In reply to Amaryllídeus, all or most of Mr. Herbert's new genera are adopted in Sweet's *Hórtus Británnicus*, 2d edit.; Mr. Herbert having assisted in preparing the portion of that work which appertains to the Amaryllíd*eæ*, as declared in the preface. — *J. D.*

The Culture of the Pine-apple. — Sir, Being a grower of pines, and wishing to obtain some farther information on their culture, permit me to make a few enquiries on the subject.

1. *In a Pit to be heated with hot-water Pipes*, the upper pipe to heat the air of the pit, and the lower one to heat the material in which the pots are plunged; what would be the most advantageous position of this lower pipe in passing through the bed, in order to heat the tan or other material equally throughout, the depth of the tan being only just sufficient to hold the pots plunged to their rims?

This plan may answer well where tan or other fermenting substances cannot be procured; but it is evident that the fire under the boiler must be kept up all the year, as pine plants require heat to their roots at all times.

2. *Queen Pines*, which show fruit in the autumn, and ripen their fruit early in spring, are generally of small pips, pointed and prominent, with many very small husky leaves rising from the point of the pip and projecting upwards. They are also destitute of that fine grey bloom which is natural to them, and appear perfectly green. This is not the case with pines which ripen in summer. What is the cause of this difference? Does it arise from mismanagement, or from causes which cannot be remedied, as want of light and sun, and the natural excitement of a growing season?

3. *Baldwin's Method of growing Pines.* As very few reasons are given for the method Baldwin adopts, it may be well to enquire into some of these reasons. Why, then, does he defer putting his plants into their fruiting pots until the end of September? Is it on account of the conveniences attending that method (and these are certainly very great), or because he believes it best for the plants? If the plants thus treated can be made to show fruit as early and as certainly as they do when shifted in the beginning of August, Baldwin's method must be far the best for the plants: for the new soil put to the plants in August, according to the usual method, becomes somewhat exhausted by the new roots made before the end of the growing season; consequently the plant growing in the same pot during the whole period of fructification cannot derive so much nourishment; whereas, when shifted in the end of September, the plant grows but little afterwards, and therefore the strength of the soil is reserved for the plant after it has shown fruit.

Again: Why does Baldwin defer taking his suckers and crowns out of the tan until the 7th of April, instead of the middle of March, which is the usual time? It is certainly most desirable for a plant designed to fruit in eighteen months, that no part whatever of the previous growing year should be lost. But Speechley says, if they are shifted before the middle of March, they do not root freely; and, if after that period, it checks them in their summer's growth. How are these conflicting statements to be reconciled? It is true that Baldwin's plan has succeeded; yet Speechley's seems the more reasonable, for by the 7th of April the young plants will have made some fine new white roots, which must by his plan be all cut off; whereas, in the middle of March, these new roots would be but small, and not of so much consequence. Which, then, is the best plan; taking into consideration Baldwin's method of growing them without pots and without fire heat?

Would young suckers do as well through the winter, growing in tan without pots in a flued pit, as they do in one without flues, and heated with dung, such as Baldwin used? Would they be in any more danger of showing fruit prematurely by having a fire flue, than if they were grown on a common tan bed lined with dung? According to Baldwin, they seldom or never show untimely fruit, grown in this latter way.

Would not a pit with a narrow walk and flue at the back, with a boarded front against which hot dung is placed, and with a proper tan bed, be as good a plan for a fruiting-pit as could be devised? even better than Baldwin's, which has no dung in front? for, besides the wholesome heat produced by the manure, it greatly assists the tan bed in keeping up a proper heat after the fires are discontinued in the summer.

Will a tan bed, well made up in the end of September, retain its heat sufficiently for fruiting plants without stirring, until the following July and August, the time when the fruit ripens? M'Phail says not; but Baldwin recommends this plan. This is a singular disagreement between two such eminent cultivators of the pine, and seems to require some investigation. Baldwin constantly practised it, and of course found it answer; M'Phail tried it by way of experiment, and found it did not answer. But, in looking at the way in which M'Phail made the experiment, it is evident he did not give it a fair trial. He covered the surface of the tan with soil a foot thick, and planted his pines in it without pots. New plants in this situation would be under very different circumstances from those of Baldwin; their roots are all above the surface of the fermenting material: when they are in pots, and plunged to their rims, they are all below it. In the winter, or early in spring, when Baldwin's bed began to decline in its heat, he had the opportunity of filling up the interstices between the pots with fresh tan, as they are only half plunged at first. This recruits the heat surprisingly;

and, when this tan began to sink and lose its heat, more might be put between, without at any time disturbing the pots. There seems but little doubt but by these contrivances the heat may be kept up easily for the fruiting plants; and still more easily if the pit is formed on the plan stated above, with boards in front for hot dung. M'Phail's experiment, therefore, was by no means a fair one: indeed, if he had tried a hundred experiments, and had still failed, it ought not to discourage gardeners from adopting this economical and easy method, when they knew that one gardener did adopt it, and succeeded by it in growing the finest fruit in the kingdom.

I have many more enquiries and remarks to make on the subject, but they must be deferred for a future paper. Yours, &c. — *S. R. May* 4.

A Pear from a Tree in an old Orchard near Gloucester. — Sir, I send you an outline (*fig.* 131.) of a pear from a tree in my orchard here, which I am very desirous of knowing the name of. There were only three fruit produced by it this season, otherwise I should have sent you some. The tree was probably imported from the Continent, as my predecessor brought a number of roses, acacias, &c., thence. The fruit was ripe, and fit to eat in the first week of the present month: it is melting, very juicy, and well though not highly flavoured. The outline was taken by cutting the pear in two. — *Thomas Speedham. Oct.* 10. 1831.

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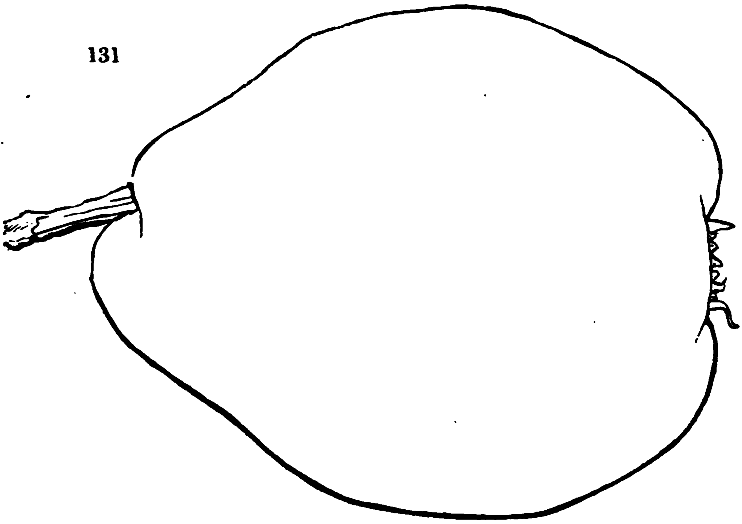

The Marie Louise Pear. — Is it not a fit sort to grow as a standard? We find it so. Mr. M'Intosh, in his *Practical Gardener*, says, it must be planted against a south wall to do any good. — *A Young Gardener. Jan.* 1. 1831.

Frontignac Grapes. — Sir, Having frequently experienced great disappointment from the failure of my crop of white Frontignac grapes, I shall feel obliged to any of your readers who will point out the cause of, and suggest a remedy for, the evil. It first shows itself at the time the grapes are making their last swell. The footstalk of the berry then withers and becomes black; and the berries themselves, instead of enlarging and proceeding to maturity, remain stationary, lose their lustre, shrivel, and continue to the last extremely acid. What renders this the more remarkable is, that up to this period of their growth they exhibit every appearance of health; and the vines continue, even when the grapes are failing, to grow vigorously and luxuriantly. Any information on this subject will be thankfully received by — *X.*

Prodigious Mushrooms. — Sir, Having read in the *Hampshire Telegraph*, in March last, an account of a mushroom raised in the garden of E. Woods, Esq., Shopwick, Chichester, by Mr. Collier, gardener, which measured in circumference 43½ in., and weighed 2 lbs. 10½ oz., I am extremely anxious to learn the details of the process whereby Mr. Collier has been enabled to grow one so extraordinarily large. The readers of your Magazine would, I am confident, feel grateful to Mr. Collier, were he to give a detailed account of the mode adopted by him with such signal success. I am, Sir, yours, &c. — *J. S. Brighton, April* 15. 1831.

The Pink-eyed Potato of Wales. (p. 249.) — In reply to J. S., both the early and late are common in Glamorganshire, and better varieties of this valuable esculent do not exist. Experience enables me to say this, for I have grown aeres of both. The *early* variety admirably succeeds the Early prolific and the Ash-leaved kidney; the *late* variety should not be used until towards the return of spring: they are excellent bearers, are very mealy, and last until June, when young potatoes take their place. Any quantity may be procured from either Mr. Miller's or Mr. Maule's well-conducted nursery, at Bristol, who will forward them to all parts of the kingdom. — *P. Lauder. Cardiff, May* 23. 1831.

Barley Bigg. — I have been looking in several books to find particulars about the qualities of the species of barley called in Scotland *bere* or *bigg*, but without success. Somebody has told me that it will do pretty well on stiff soil; that it produces more corn, though not of such good quality as common barley, on the acre; that it may be sown in autumn and fed down by sheep during the winter, or sown in the spring time later than barley; and that it ripens in a much shorter time. It is also said to yield nearly as much spirit, and to make beer as well, or nearly so. If these things are true, it must be a very valuable grain; and having some land which is late and heavy, I should like to try it. Can you give any account of its nature and means of cultivation, or where the finest sorts are grown, and how they are to be obtained? — *X. Y. London, Aug.* 29. 1831.

"Winter barley has the grains disposed in four or in six rows, large and thick-skinned. It is chiefly cultivated in the north of England and in Scotland, on account of its hardiness; but, from the thickness of its rind, is ill adapted for malting, and is going out of use.

"Bigg, byg, or barley big, is a variety of the winter barley, known by always having six rows of grains, by the grains being smaller and the rind thicker, and by its being earlier than the parent variety. Professor Martyn says, he has frequently counted forty-two grains on one ear of bigg, when common, or long-eared, barley had only twenty-two. Bigg may be sown either in autumn to stand the winter, or as late as the first week in June. In England, the winter or four-rowed barley is frequently sown in autumn, and stands the most severe winters. With respect to the lateness at which bigg and summer barley may be sown, much depends on the sort of weather in the first three weeks after sowing." (*Encyclopædia of Agriculture*, p. 823, 824. 2d edit.)

Barley big, or big barley, is occasionally cultivated in the woodland part of Suffolk for feed for sheep, where, I believe, the soil is generally a clayey loam; in Cambridgeshire, in soils lighter than the above, it occurs mixed with the wheat, but only sparingly, and is deemed deteriorating to the sample of wheat, in consequence of which the reapers are, or used to be, set to glean it out of the sheaves, in weather in which it is too damp to reap thew heat. — *J. D.*

Art. VIII. *Covent Garden Market.*

	From £	s.	d.	To £	s.	d.
The Cabbage Tribe.						
Cabbages, per dozen:						
White - -	0	0	6	0	1	0
Red - -	0	1	0	0	3	0
Plants, or Coleworts -	0	1	0	0	2	0
Savoys, per dozen - -	0	0	6	0	1	0
Cauliflowers, per dozen -	0	1	0	0	3	0
Broccoli, per bunch:						
White - - -	0	0	6	0	1	3
Purple - -	0	0	4	0	1	0
Cape - - - -	0	0	4	0	1	0
Tubers and Roots.						
Potatoes - per ton	3	0	0	4	0	0
per cwt.	0	3	0	0	4	0
per bush.	0	1	9	0	2	3
Kidney, per bushel -	0	2	0	0	2	3
Scotch, per bushel -	0	1	6	0	2	0
Jerusalem Artichokes per half sieve	0	1	6	0	0	0
per dozen -	0	0	6	0	0	0
Turnips, White, per bunch	0	0	1	0	0	1½
Carrots, Old, per bunch -	0	0	4	0	0	6
Parsneps, per dozen -	0	0	6	0	1	0
Red Beet, per dozen -	0	0	6	0	1	0
Skirret, per bunch -	0	0	8	0	0	0
Scorzonera, per bundle -	0	1	3	0	0	0
Salsify, per bunch - -	0	0	8	0	0	0
Horseradish, per bundle -	0	2	6	0	5	0
Radishes:						
Red per dozen hands (24 to 30 each) -	0	0	6	0	0	0
per bunch - -	0	0	1	0	1	0
Turnip, White, per bunc.	0	0	1	0	1	0
The Spinach Tribe.						
Spinach per sieve -	0	1	0	0	0	0
per half sieve -	0	0	6	0	0	0
Sorrel, per half sieve -	0	1	0	0	0	0
The Onion Tribe.						
Onions:						
Old, per bushel - -	0	4	6	0	5	0
For pickling, per ½ sieve	0	4	0	0	5	0
Green (Ciboules), p. bunc.	0	0	4	0	0	6
Leeks, per dozen bunches	0	0	9	0	1	0
Garlic, per pound - -	0	0	9	0	1	0
Shallots, per pound - -	0	1	0	0	1	4
Asparaginous Plants, Salads, &c.						
Cardoons, per bun. (three)	0	3	0	0	0	0
Lettuce, per score:						
Cos - -	0	1	0	0	0	0
Cabbage - -	0	0	6	0	0	0
Endive, per score, - -	0	0	9	0	1	6
Celery, per bundle (12 to 15)	0	0	4	0	1	0
Small Salads per half sieve	0	1	6	0	0	0
per punnet	0	2	0	0	3	0
Watercress, per dozen small bunches - - -	0	0	4	0	0	6
Burnet, per bunch -	0	0	1	0	0	0
Pot and Sweet Herbs.						
Parsley, per half sieve -	0	1	0	0	0	0
Tarragon, per dozen bunches	0	5	0	0	0	0
Fennel, per dozen bunches	0	2	0	0	0	0
Thyme, per dozen bunches	0	2	6	0	0	0
Sage, per dozen bunches	0	2	0	0	0	0

	From £	s.	d.	To £	s.	d.
Mint, dried, per doz. bunc.	0	2	0	0	0	0
Peppermint, dried, per doz. bunches - - -	0	3	0	0	0	0
Marjoram, per doz. bunches	0	1	0	0	0	0
Savory, per dozen bunches	0	3	0	0	0	0
Basil, per dozen bunches -	0	1	6	0	0	0
Rosemary, Green, per dozen bunches - -	0	6	0	0	0	0
Lavender, Dried, per dozen bunches - - -	0	3	0	0	0	0
Tansy, per dozen bunches	0	1	0	0	0	0
Stalks and Fruits for Tarts, Pickling, &c.						
Tomatoes, per sieve -	0	5	0	0	0	0
Capsicums, per hundred:						
Green - - -	0	1	6	0	0	0
Chile - - -	0	2	0	0	0	0
Large Red, per dozen -	0	4	0	0	6	0
Edible Fungi and Fuci.						
Mushrooms, per pottle -	0	1	0	0	1	6
Morels, dried, per pound	0	12	0	0	0	0
Truffles, per pound:						
English - - -	0	12	0	0	0	0
Foreign -	0	12	0	0	0	0
Fruits.						
Apples, Dessert, per bushel:						
Ribston Pippins -	0	18	0	1	0	0
Nonpareils - -	1	4	0	1	8	0
Golden Knobs - -	0	15	0	0	0	0
Apples, Baking, per bushel	0	6	0	0	10	0
French - -	0	5	0	0	8	0
Court-pendu -	0	4	0	0	7	0
Royals - -	0	6	0	0	7	0
Pears, Dessert, per ½ sieve:						
Swan's Eggs - -	0	8	0	0	10	0
Chaumontel - -	0	10	0	0	16	0
Winter Beurré - -	0	18	0	0	0	0
St. Germains - -	0	14	0	0	18	0
Crassane - -	0	14	0	0	16	0
Pears, Baking, per half sieve	0	3	0	0	0	0
Quinces per half sieve	0	0	0	0	16	0
per dozen -	0	6	0	0	0	0
Medlars - - - -	0	8	0	0	12	0
Almonds, per peck -	0	7	0	0	0	0
Walnuts, per bushel -	0	4	0	0	6	0
Chestnuts, per peck:						
English - -	0	2	0	0	2	6
French - - -	0	3	0	0	8	0
Filberts, English, per 100 lbs.	7	10	0	8	0	0
Pine-apples, per pound -	0	6	0	0	10	0
Grapes, per pound:						
Hot-house - - -	0	3	0	0	6	6
Spanish - -	0	0	10	0	1	0
Black Hamburgh -	0	2	0	0	4	0
Melons, Spanish, per pound	0	2	6	0	4	0
Oranges per dozen -	0	0	9	0	2	0
per hundred	0	3	0	0	14	0
Lemons per dozen -	0	1	0	0	2	0
per hundred	0	6	0	0	12	0
Pomegranates, per dozen	0	4	0	0	6	0
Sweet Almonds, per pound	0	2	3	0	3	0
Brazil Nuts, per bushel -	0	12	0	0	16	0
Spanish Nuts, per peck -	0	6	0	0	0	0
Barcelona Nuts, per peck	0	7	0	0	0	0

Observations. — Up to the present period our supplies of vegetables have been most abundant, and of excellent quality; the prices as yet have been low, consequently the growers feel dissatisfied; indeed, the horticultural as well as the agricultural interests may be considered as in a very depressed state. It is difficult to determine the cause of this continued depression, especially with the horticulturists, unless it arises from the taking up of so much land for the purposes of vegetable culture in the immediate neighbourhood of the metropolis, or from the improved facilities of conveyance, which enables the growers at a distance to bring to London their produce, both of which causes may have some effect; but the continued increase of the population, and the dispersion of the gardeners from the more immediate neighbourhood, might, I suppose, effectually counterbalance them. Nothing very new has been offered to our notice this season, but it is a common remark that vegetables in general have greatly improved, despite of the very unfavourable circumstances of the growers; and I think this may be fairly attributed to the general diffusion of knowledge, more especially among the gardeners, by the means of the publications devoted to that purpose. Our old friends complain of this, and say that it is of little use to a man to devote his whole life to the acquisition of the knowledge of his business, if he is to be deprived of its advantages by the communication of its results to the public at large, without immediate benefit to himself. That some such inconvenience may arise to many worthy well-disposed gardeners I have no doubt; but I think they must be satisfied with the assurance, that their children will ultimately share the general good, by this method of dispensing the advantages of all modern improvements in our system of culture. After all, it must be consolatory to our worthy friends, that experience and persevering industry are essentially necessary to all gardeners, to enable them to avail themselves of the casualties of our climate; and, with whatever advantages the younger branches of the profession may enter into competition with them, that it is time and application alone which can insure them success.

The supply of fruits generally, as arising from our own produce, has been extremely limited; but this has been amply compensated by a large importation from Dutch Flanders, more especially of apples, of excellent quality of course. Prices have declined considerably, which, under the peculiar circumstances of our cultivators having lost their crops, is to them matter of great privation. Onions prove to be good, and in tolerable quantity, at a fair remunerating price. Potatoes are plentiful, and at good prices; at present steady, and not likely to vary; an improvement in which would alone justify the growers in the distant counties, or in Scotland, to send them up. Nevertheless, we have now an excellent supply from Yorkshire and Scotland, from which places we are accustomed to expect them at this season in large quantities. — *G. C.* *November* 16. 1831.

ART. IX. *Horticultural Society and Garden.*

SEPT. 6. — *Read.* The Meteorological Observations made at the Society's Garden during the months of June, July, and August.

Exhibited. Black Hamburgh grapes, from Charles Welstead, Esq. F.H.S. George the Fourth peaches, from Mr. J. A. Henderson. Black Hamburgh grapes, Muscadine grapes, Scarlet-fleshed rock melon, Grosse mignonne peaches, Elruge nectarines, and Green gage plums, from Mr. Hughes, gardener at Norman Court, Stockbridge. Of this collection, the grapes were fine specimens of cultivation. A Hoosainee melon, from T. A. Knight, Esq., which proved to be delicious. Elruge nectarines, Old Newington Nectarines, White Ischia figs, Large purple figs, Noblesse peaches, Royal George peaches, Golden drop plums, La royale plums, and Melon of Gerger, from Sir Charles Sullivan, Bart. This was a very reputable collection; the figs were particularly fine, and the melon of great excellence. A Cockscomb, from C. Hanbury Tracey, Esq. Beurré d'Amalis pears, from Mr. P. Langelier of Jersey; a new variety, stated to bear well as a standard. A collection of Chinese asters, from Messrs. Allen and Rogers, King's Road, Chelsea. Black Tripoli grapes, from Lord Bexley, Foot's Cray Place. Wheatear carnations, Grange apples, and Nonesuch apples, from Mr. Joseph Kirke, F.H.S. Collections of georginas, from the following persons: — Mr. Nairn, gardener to Mr. Orby Hunter at Newsell's Park; Mr. Gardner of Earl Acton; Mr. John Cree of Addlestone nursery, Chertsey; Mr. Joseph Wells, gardener to William Wells, Esq., of Redleaf, near Tunbridge; Mr. Thomas Wells, gardener to John Wells, Esq., Bickley House, Bromley; Mr. J. D. Parks, nurseryman, Welling, near Dartford; Mr. C. Brown, of Slough; and Messrs. Sinclair and Cormack, New Cross nursery, Deptford. These having been sent, in compliance with the invitation of the Society (p. 381.), in a competition for the large silver medal, the chairman, Peter Grant, Esq., named Mr. Chandler, Mr. John Mearns, and Mr. Munro, as judges; who awarded the large silver medal to Mr. Joseph Wells, for his collection of seedling georginas; and recommended that the Banksian medal be given to Mr. C. Brown of Slough, and Mr. T. Wells, Bickley House, Bromley.

Also, from the Garden of the Society. Flowers. China asters, Justíc*ia* speciòsa, Calceolària arachnöídea, Pentstèmon atropurpùreus and campanulàtus, *L*upìnus ornàtus, Cladánthus arábicus, *V*erbèna *c*hamædrifòlia, pulchélla, and Aublèt*ia*, Gaillárd*ia* bícolor and aristàta, *P*hlóx tardiflòra, Georginas, *H*ibíscus syrìacus (varieties), *Œ*nothèra serótina, Gíl*ia* capitàta (white variety), Calámpelis scàbra, Zephyránthes cándida, *S*álvia involucràta, Colchicums, Francís*cea* Hope*àna*, *C*lématis baleárica and flámmula rotundifòlia, Eulòphia Mackai*àna*, Compósitæ sp. of Douglas, *Pyrrhópsis élegans. — Fruit. Netted French melon, Cephalonian melon. Pears: Belle et bonne, Sanspareil, Early bergamotte (a great bearer as a standard), Green pear of Yair, Formé de Rousselet, Vallée Franche, Archiduc d'été, Franc-réal d'été. Longville's kernel apple. Peaches: Barrington (a new sort, tree healthy and vigorous; a good bearer; glands globose; trees with such generally, this in particular, not subject to mildew: leaves glandless are found most subject to this), Bellegarde, Grosse mignonne, Noblesse (well known to be a good sort), Royal Charlotte (the Madeleine à petites fleurs of the French), Incomparable (a large high-coloured Clingstone, but not very good), Early admirable. Nectarines: Elruge, Pitmaston orange (a hard, good-bearing sort), Newington, White, Golden (sometimes very good, when the season is good, and in a warm soil and situation). Nuts: Cosford nut, Cob nut, Frizzled filbert (a great bearer), Red filbert, White filbert, Large Cob nut, Downton long nut, Downton large square nut, Spanish nut, Barr's Spanish nut, Bond nut.

Sept. 20. — *Exhibited.* Black Hamburgh grapes, and Beddington muscadine grapes; from Edmund Tattersall, Esq.: the latter appear to be the Chasselas musqué grape of the French. Hancock grapes (a fine variety, resembling the Raisin des Carmes), and Bengale hermite rose, from Mrs. Marryatt. Very beautiful Black Hamburgh grapes, from a green-house without fire, from John Allnutt, Esq. Page's late melting peach (apparently the Late admirable), Potentílla Hopwood*iàna*, *D*elphínium sinénse seedling, three sorts of seedling Roses, and other flowers, from the Misses Garnier, Wickham, Hants. A very fine bunch of Black Prince grapes, from Mr. H. Silverlock, F.H.S. Onions, from seeds sown in August, from Mr. Robert Ross of Penrhyn Castle. Seventy sorts of Georginas, double white Althæ'a frùtex, *A*sclèpi*as* tuberòsa, Raphiólepis rùbra, and seedling *D*elphínium sinénse; from Messrs. Rollisson of Tooting. Double-bearing raspberries, white Nice grapes, and eight sorts of apples, from Mr. Joseph Kirke, F.H.S. A very fine Cockscomb, from Mr. Gundry, gardener to S. Paynter, Esq., at Richmond.

Also, from the Garden of the Society. Flowers. *V*erbèna *c*hamædrifòlia, Cladánthus arábicus, *M*álva miniàta, Gaillárd*ia* aristàta and bícolor, *H*ibíscus africànus and syrìacus (varieties), *P*hlóx marilándica, Gesnèr*ia* macrostàchya, Alstrœmèr*ia* acutifòlia, *S*álvia cardinàlis and involucràta, *M*álva purpuràta, Chinese asters, Georginas, *L*upìnus ornàtus; *R*òsa índica *ane-*

moneflòra, supérba, Champney*ana*, and Bengale mouseline; Invincible carmine rose, Wells's noisette, *Pyrrhópsis élegans. — Fruit. Pears: Belotte (crisp, a sort of Calebasse), De Tamaise, Inconnue Cheneau, Inconnue Angoulême (a new sort, somewhat resembling the Bishop's Thumb; when in perfection, supposed to be very good), Poire d'Amour, Henri Quatre, and Grise bonne (old French pears), Duquesne d'été, Green pear of Yair, Belle et bonne, Forme de beurré Duquesne (from Van Mons, second-rate), Reine des poires (rather crisp; is now far from deserving that name). Peaches: Sanguinole (melting, used in preserves; some Sanguinoles are clingstones), Braddick's North American (a yellow-fleshed clingstone), Morrisania pound (has been grown in America to that weight, and is here a very good peach, though not better than the following), Late admirable (Téton de Vénus, or Royale, the best of the late melting peaches), Chancellor (the Belle Chevreuse differs very little from this), Nivette (scarcely distinguishable from the Late admirable). Cephalonian melon; Seedling pine-apple of Oldaker (this is the first time that this pine has fruited at the garden); Tomatoes, viz. Large red, Red cherry, Yellow cherry, Large cherry, Pear-shaped red, Small pear-shaped.

Oct. 4. — *Read.* An account of the striped Hoosainee Persian melon; by T. A. Knight, Esq. Nine sorts of Apples, from Mr. Joseph Kirke. A Monstrous pippin, from Wm. Pridden, Esq. Brown beurré, and Gansell's bergamotte pears, and nine sorts of Apples, from Law Brock Hollinshed, Esq. Seedling Georginas, from Mr. James Veitch of Killerton, near Exeter. A very fine collection of seedling Georginas, from Mr. John Lee. Phytolácca decándra, from John Allnutt, Esq. Two very valuable seedling Apples, from Dr. Maclean of Sudbury.

Also, from the Garden of the Society. Flowers. Cladánthus arábicus, Gíl*ia* capitàta (white), Stèv*ia* purpùrea, *T*agèt*es* lùcida, Œnothèra serótina, *V*erbèna *c*hamædrifòlia, *S*álvia cardinàlis, Calceolària bícolor, Escallòn*ia* rùbra, Georginas, Asters. — Fruit. Pears: Brown beurré, Flemish beauty, Neill, Autumn Colmar (has not come so fine as usual), Styrian (rather crisp), Beurré de Capiaumont (hardy, and stands the spring frosts), Marie Louise (would be much better in a few days), Beurré Diel (a few specimens ripened earlier, in consequence of the plant, a standard, having been moved: the general crop will last for two months yet), Calebasse (a great bearer; very sweet, but rather crisp), Doyenné blanc (bears well as a standard), De Tamaise, Henri Quatre (rather a small fruit, but a good bearer), Beurré Knox (a very abundant bearer, but soon decays), Reine des poires, Urbaniste (seems not to be so good a bearer as some of the other new pears), Gendeseim. Catherine peach, Miller's Burgundy grape, Cephalonian melon, Potiron jaune.

Oct. 20. — *Read.* A paper on the propagation of Balsams by cuttings; by the author of the *Domestic Gardener's Manual.*

Exhibited. Handsome specimens of two dwarf Cockscombs, from J. Archdale Palmer, Esq. Chaumontelle pears, from Mr. G. Watson, gardener to Lord Palmerston. Scarlet arbutus, a particularly fine variety, from Mr. Joseph Kirke. Quércus *I*lex with variegated leaves, and Georginas, from Mr. J. Veitch of Killerton nursery, near Exeter: the seedlings of this collection were among the most remarkable of the present season, they were most beautiful. Five sorts of Indian corn; from Professor La Gasca. Very perfect heads of Indian corn grown in the Isle of Wight, from Lord Vernon, F.H.S. Small specimens of Indian corn, from G. J. Powers, Esq. A very large variety of Walnut, with a thin shell and exceedingly delicate kernel, from J. Biddulph, Esq. A specimen of a hoe, called a Tally from Lord Vernon; recommended as being a very efficient instrument for stirring soil between rows. It had a handle about 4 ft. long, and a curved iron end, the point of which was flat and triangular, with a cross-bar for breaking clods. A pruning knife, from Lord Vernon, Various flowers, from Mr. Donald, nurseryman, Woking. Rose Noisette, from J. Allnutt, Esq. La Fameuse apple, and Marie Louise pears, from L. Haslope, Esq.

Also, from the Garden of the Society. Flowers: *V*erbèna *c*hamædrifòlia, Stèv*ia* purpùrea, *S*álvia Grahàm*i*, involucràta, spléndens, and pseùdo-coccínea, Fúchs*ia* virgàta and microphýlla, *L*upìnus ornàtus, Justíc*ia* speciòsa, Asters, Georginas. — Fruit. Pears: Beurré Diel, Marie Louise, and Doyenné blanc (the season of this excellent sort may be prolonged by planting against a north wall, on which it succeeds well; the same remark will also apply to the Beurré Diel: such a situation would be lost on most of the old sorts), Beurré Knox (hardy), Gendeseim (a good bearer), Sucré vert, Duchesse d'Angoulême (found, contrary to what has been reported of it, to be a good bearer), Beurré de Capiaumont, Calebasse (a great bearer), Inconnue cramoisine (produces sometimes very large fruit on a standard, but is not of first-rate quality), Styrian (bears every year a second crop; the latter production is, however, very different, in form, texture, and quality, from that from mature buds and perfect blossoms: a tolerably good sort, but not first-rate), *P*sídium Cattle*iànum.* Vegetables: Leaf beet, Couve Tronchuda.

ART. X. *Provincial Horticultural Societies.*

CAMBRIDGESHIRE.

THE Cambridge Florists' Society.—The Tulip Show was held on May 16. The following is the award of the judges: —

Tulips. Feathered Bizarres: 1. Catafalque, Mr. Finch; 2. Trafalgar, Mr. Ready; 3. Captain White, Mr. Bailey; 4. Roi de Perse, Mr. Ready; 5. Lustre, Mr. Peeling; 6. Trafalgar, Mr. Finch. — Feathered Bybloemen: 1. Ambassadeur van Holland, Mr. Peeling; 2. Washington, Mr. Bailey; 3. Washington, Mr. Finch; 4. Pearson's Regent, and 5. Ambassadeur van Holland, Mr. Peeling; 6. Washington, Mr. Twitchett. — Feathered Roses: 1. Heroine, Mr. Ready; 2. Rose Baguet, Mr. Finch; 3. Light Baguet, Mr. Peeling; 4. Thalestris, Mr. Nutter; 5. Rose Baguet, Mr. Finch; 6. Vesta, Mr. Pryor. — Flamed Bizarres: 1. San Josef, Mr. Twitchett; 2. Charbonnier, and 3. Surpasse-Catafalque, Mr. Peeling; 4. Captain Black, Mr. Finch; 5. Abercrombie, Mr. Bailey; 6. Lansdowne, Mr. Pryor. — Flamed Bybloemen: 1. Roi de Siam, Mr. Ready; 2. Impératrice Florum, Mr. Bailey; 3. and 4. Roscius, Mr. Peeling; 5. Impératrice de Maroc, Mr. Peeling; 6. Impératrice de Maroc, Mr. Finch. — Flamed Roses: 1. and 2. Triomphe Royal, Mr. Peeling; 3. Triomphe Royal, Mr. Rickard; 4. Guerrier, Mr. Ready; 5. Sisygambis, Mr. Peeling; 6. Matilda, Mr. Finch.

Anemones: 1. Mr. Crisp; 2. Mr. Stearn. — *White Stock*, Mr. Crisp. (*Cambridge Chronicle*, May 20.)

June 14. The Ranunculus and Pink Shows were held on June 14. The following is the award of the judges: —

Ranunculuses. White Spotted: 1. Princess of Wales, Mr. Peeling; 2. Princess of Wales, Mr. Ready; 3. Addison, Mr. Twitchett; 4. Benjamin, Mr. Ready; 5. Princess of Wales, Mr. Finch; 6. Belle Zoraide, Mr. Bailey. — Dark Purple: 1. Kempenfeldt, 2. Germanicus, and 3. Viriâtre; Mr. Ready; 4. Viriâtre, Mr. Finch; 5. Charbonnier, Mr. Peeling; 6. Charbonnier, Mr. Finch. — Yellow Spotted: 1. Andromache, Mr. Ready; 2. Andromache, Mr. Crisp; 3. Nestor, Mr. Twitchett; 4. Nestor, Mr. Finch; 5. Medora, Mr. Twitchett; 6. L'Arbrisseau, Mr. Ready. — Rose and Pink: 1. Duchess of Orleans, Mr. Finch; 2. Diomede, Mr. Ready; 3. Messala, Mr. Stubbings; 4. Duchess of Orleans, Mr. Bailey; 5. Phedra, and 6. Hermine, Mr. Stubbings. — White-edged: 1. Sophia, Mr. Ready; 2. La Tendresse, Mr. Crisp; 3. and 4. Calchas, Mr. Peeling; 5. New Venus, Mr. Ready; 6. Fair Flora, Mr. Peeling. — Light Purple and Grey: 1. New Nomius, Mr. Ready; 2. New Nomius, Mr. Finch; 3. Baroness Percy, Mr. Ready; 4. Nomius, Mr. Finch; 5. Virgil, Mr. Ready; 6. Noir Foncé, Mr. Finch. — Orange: 1. Brabançon, Mr. Crisp; 2. Royal Orange, 3. Agamemnon, 4. Orangière, and 5. Groot Mogul, Mr. Peeling; 6. Prince of Orange, Mr. Ready. — Black: 1. and 2. Naxara, Mr. Twitchett; 3. Naxara, Mr. Ready; 4. Œil Noir, Mr. Twitchett; 5. Naxara, Mr. Finch; 6. Naxara, Mr. Peeling. — Buff: 1. Cox's Buff, Mr. Crisp; 2. Pisistrate, Mr. Twitchett; 3. Couleur de Perle, Mr. Bailey; 4. Cox's Buff, Mr. Crisp; 5. St. Jerome, Mr. Ready; 6. St. Jerome, Mr. Twitchett. — Red and White Striped: 1. Rosetta, and 2. Téméraire, Mr. Ready; 3. Orissa, and 4. Cour de France, Mr. Bailey; 5. Orissa, Mr. Crisp; 6. Téméraire, Mr. Twitchett. — Olive: 1. Jaune en Pompadour, and 2. Bouquet Sanspareil, Mr. Twitchett; 3. Jaune en Pompadour, and 4. Euphorbia, Mr. Ready; 5. Bouquet Sanspareil, Mr. Twitchett; 6. Harvey's Olive, Mr. Crisp. — White: 1, 2, and 3. Charlotte, Mr. Finch; 4. Kermes, Mr. Ready; 5. Charlotte, Mr. Finch; 6. La Favorite, Mr. Bailey. — Yellow-edged: 1. and 2. Julius, Mr. Ready; 3. Prince Galitzin, Mr. Twitchett; 4. Pucelle, Mr. Crisp; 5. Pucelle, Mr. Ready; 6. Le Roi Frédéric de Prusse, Mr. Bailey. — Crimson: 1. Apollo, Mr. Ready; 2. Jupiter, Mr. Twitchett; 3. Jupiter, Mr. Peeling; 4. La Chérie, and 5. Nouvelle Pallas, Mr. Ready; 6. Rubra Magnifique, Mr. Twitchett. — Yellow and Sulphur: 1. Beroth, 2. Adrian, and 3. Eliza, Mr. Twitchett; 4. Beroth, 5. Adrian, and 6. Golconda, Mr. Ready. — Scarlet: 1. Bienfait, Mr. Ready; 2. Dowton's Rising Sun, Mr. Bailey; 3. Dowton's Rising Sun, Mr. Crisp; 4. Cedo Nulli, Mr. Twitchett; 5. Dowton's Firebrand, Mr. Crisp; 6. Jupiter, Mr. Twitchett. — Coffee-coloured: 1. Orpheus, and 2. Prince George, Mr. Ready; 3. Versaillois, Mr. Twitchett; 4. Versaillois, Mr. Ready; 5. Theodat, Mr. Stubbings; 6. Prince George, Mr. Twitchett. — Red and Yellow Striped: 1. Brooke's Scarlet and Gold, Mr. Stubbings; 2. and 3. Mélange des Beautés, Mr. Crisp; 4. Œillet

Gold-striped, Mr. Twitchett; 5. Scarlet and Gold, Mr. Stubbings; 6. Mélange des Beautés, Mr. Crisp. — Shaded White: 1. Cooper's Curion, Mr. Twitchett; 2. Tillott's Blush, Mr. Ready; 3. Cooper's Curion, Mr. Twitchett; 4. Tillott's Blush, Mr. Stubbings; 5. Tillott's Blush, Mr. Finch; 6. Gyett's Caroline, Mr. Twitchett. — Mottled: 1. Julienne, Mr. Bailey; 2. Julienne, Mr. Finch; 3. Thompson's Queen, Mr. Twitchett; 4. Manlius, Mr. Ready; 5. Thompson's Queen, Mr. Bailey; 6. Cassandra, Mr. Ready. — Seedling Ranunculus, Mr. Bailey.

Pinks. Red-laced: 1. Hogarth's Rose, Mr. Ripsher; 2. Harefield Beauty, Mr. Pryor; 3. Hunter's Miss Gloss, 4. Hogarth's Rose, and 5. Styles's Hero, Mr. Ripsher; 6. Kean's Wellington, Mr. Pryor. — Purple-laced: 1. Lord Byron, Mr. Rickard; 2. Tranter's Emperor of Morocco, Mr. Pryor; 3. Bow's Lustre, Mr. Ripsher; 4. Harefield Beauty, Mr. Pryor; 5. Davies's Royal Standard; 6. Tranter's Emperor of Morocco, Mr. Pryor. — Rose-leaved: 1. Harefield Rose, Mr. Rickard; 2. Bow's Suwarrow, Mr. Twitchett; 3. Harefield Beauty, Mr. Pryor; 4. Harefield Beauty, Mr. Rickard. — Plain: 1. Hopkins's Number Nine, Mr. Ripsher. — Seedlings: 1, 2, 3, 4, 5, and 6. Mr. Ripsher. (*Cambridge Chronicle*, June 17.)

Cambridgeshire Horticultural Society.—April 20. The Rev. R. Lascelles (the chairman) announced the following adjudication of prizes: —

Flowers. Auriculas. Best four, one of a sort: 1. Lee's Colonel Taylor (green), Grimes's Privateer (grey), Taylor's Favourite (white), Hutton's Squire Mundy (self), Rev. R. Lascelles. Best two of different colours: Warris's Blucher, Netherfield Beauty, Rev. R. Lascelles. Best of any colour, Stretche's Alexander, Rev. R. Lascelles. Seedling, Mr. Gimson. — Polyanthus, Brown King, Mr. Widnall. Seedling, Rev. R. Lascelles. — Pot of Pinks (grown at King's College), La Belle Alliance, Mr. Catling. — Double Primroses (in pots), Double White, Crimson, Scotch, Mr. Denson.

Fruit. Table Apples: Aromatic Russet, Cheveley Golden Pippin, Nonpareil, Unknown, Mr. Challis. — Strawberries, Keen's Seedling, C. Pemberton, Esq.

Culinary Vegetables. Cucumbers: 2. Catling's Superb, Mr. Catling. — Potatoes, forced, planted in 1831 (14 to the pound): Early Manchester, Mr. Palmer. — Broccoli, White, Colonel Pemberton. — Cabbage (2 lbs. 3 oz. weight), Wellington, Mr. Widnall.

Extra-Prizes. Lettuces: White Cos, Mrs. R. Foster, jun. — White Cabbage, C. Pemberton, Esq. — Plant in a pot: 1. Azàlea índica *rò*sea, Mr. Biggs.

A brace of very fine cucumbers, and some early potatoes (10 to the pound), sent to the hall by Mr. Ekin of the Sun Hotel, were too late for competition. (*Cambridge Chronicle*, April 22.)

May 18. The following is the award of the judges: —

Flowers. Tulips. Six best, one of a sort: 1. Siam, Charbonnier, Triomphe Royal, Zwart Violet, La Tendresse, Baguet, Mr. Frederick Finch; 2. Claudiana, Charbonnier, Noir, Triomphe Royal, Captain White, La Mère Brune, Incomparable, Roi de Siam, Mr. Twitchett. Three best, one of a sort: Lord Russell, Washington, Déesse Flora, Mr. Haylock. Best: 1. Majestueuse, Mr. Haylock; 2. Triomphe Royal, Mr. Peeling.—Anemones. Four best, one of a sort: 1. L'Empereur de Russe, La Favorite, Déesse Flora, La Belle Josephine, Mr. Searle; 2. Belle Henriette, Nouvelle Aurora, Rose Perni de Flora, Impératrice de Russe, Mr. A. Newby. Best Rose Séence de Fleur, Mr. Searle. — Pelargoniums. Four best, in pots: 1. Victory, Lord Yarborough, Hùme*i*, Princess Augusta, Mr. Widnall; 2. Lord Combermere, Anne Boleyn, Princess Augusta, Macránthon, Mr. Palmer. In a pot: 2. Davey*ànum*, Mr. Searle. — Stocks, two best cut: 2. White Giant, Mr. John Denson.

Fruit. Strawberries, Keen's Seedling, Mr. Challis.

Culinary Vegetables. Lettuces: 2. Brown Cos, Colonel Pemberton. — Asparagus (six best, weight 1 lb. 2 oz.): 1. Mr. Palmer; 2. (weight 1 lb. 1 oz.), Mr. Palmer.

Extra-Prizes. Cabbage, Imperial, Mr. Widnall. — Georgina, Crimson Globe, Mr. Widnall. — Apples: Nonpareil, Cheveley Golden Pippin, Mr. Challis. — *C*áctus speciòsa, The Master of Sidney College. (*Cambridge Chronicle*, May 20.)

June 15. The chairman (the Rev. R. Lascelles) announced the following award of the judges: —

Flowers. Ranunculuses. Twelve best, one of a sort: Prince Galitzin, Jaune en Pompadour, Beroth, Cedo Nulli, L'Acajou, Germanicus, Nomius, Bouquet Sanspareil, Adrian, Hercules, Nomius, Robert Burns, Mr. Twitchett. Six best, one of a sort: Feu de Fontenoy, Cedo Nulli, Nomius, Comble des Richesses, Venus, Voctonnox, Mr. Challis. Ranunculus, Mr. F. Finch. Seedling, Bailey's Princess Victoria, Mr. Bailey. — Pinks. Nine best, one of a sort: 1. La Belle Alliance, Beau Suwarrow, Knight's Lady Acland, Barratt's Conqueror, Davey's Eclipse, Clarke's Smolensko, Harefield Beauty, Bexley Hero, Little Surprise, Mr. Catling; 2. Adelaide, Hopkins's Number Two, Bow's Lustre, Keen's Wellington, Styles's Hero, Banbury Hero, Ambrose's Lady Hill, Barratt's Conqueror, Seedling, Mr. Ripsher. Four best, one of a sort: 1. Harefield Beauty, Biggleswade Beauty, Booth's Wellington, Sharpe's Seedling, Mr. Pryor; 2. Barratt's Conqueror, Barnard's Bexley Hero, La Belle Alliance, Harefield Beauty, Mr. Haylock. Pink, Bray's Invincible, Mr. Haylock. Seedling, Mr. Ripsher. — Roses. Six best: 1. Seedling, Pompone Blanche, African Black, Blanche Superbe, White, Nouvelle Pivoine, Passe-Violette, Mr. Widnall; 2. Double Yellow, George the Fourth, White Provence, Blush Scarlet Moss, Two Unknown, Rev. R. Lascelles. Rose, Shaler's Provence, Mr. Gimson.

Fruit. Strawberries. For flavour, Mr. Brewer. Best pound, containing fewest (34 to the lb.): Keen's Seedling, Colonel Pemberton. — Cherries, May Duke, Col. Pemberton. — Melon (not less than 1½ lb.), Early Golden Cantaloup, Mr. Dall.

Cottagers' Prizes. Potatoes, James Tuck, Windmill Cottage, Harston. — Roses: George the Fourth, Moss Rose, Unknown; Edward Dowse, Ickleton.

Extra-Prizes. Apples, Winter Pearmain, Mr. John Newman, Lord De La Warr's gardener. — *C*áctus Jenkinsòn*i*, Mr. Widnall. — Calceolària rugòsa, Mr. Biggs. — Giant Stocks (cottager's extra), J. Tuck, Harston.

Sept. 7. The flowers were of the highest order, particularly the georginas, China asters, and marigolds. Among the articles for which prizes were given, the following are named: —

Flowers. Georginas, Double. Twelve best, one of a sort: 1. (medal) Mountain of Snow, Countess of Liverpool, Augusta, Royal Lilac, Bohemia, Surpasse-Triomphe Royal, Barratt's Susiana, Widnall's Nonpareil, Cambridge Surprise, Foster's Constantia, Widnall's Queen of Roses, Pure Yellow, Mr. Widnall; 2. King of Whites, Pure Yellow, Countess of Liverpool, Coccínea máxima, Brewer's Cambridge Surprise, Douglas's Augusta, Colville's Perfecta, Royal Lilac, Achilles, Victory, Rose Constantia, Lord Farnborough. Six best, one of a sort: 1. Mogul, Splendida, Black Turban, Bright Sulphur Yellow, Galatea, Seedling; 2. Countess of Liverpool, Barratt's Susiana, Cambridge Surprise, Achilles, Pure Yellow, Perfecta, Mr. Biggs. Georgina, Globe Dark Crimson, Mr. Widnall. Seedling, Mr. Robert Nutter.

Fruit. Grapes: Black, Black Hamburgh, Rev. George Jenyns; White, White Nice, Mr. Dall; Frontignac, White, Mr. Dall; White Out-door, Sweetwater, Mrs. R. Foster. — Peaches. Two sorts, six of a sort: Noblesse, Colonel Pemberton. — Nectarines. Two sorts, six of a sort: Elruge, Colonel Pemberton. Six of any sort, Red Roman, Mr. John Newman. — Plums. Two sorts, ten of a sort: Coe's Seedling, Green Gage, Mr. Challis. Dish, Green Gage, Rev. George Jenyns. — Cherries, Morello, Mr. Challis. — Gooseberries, Warrington Red, Mr. Challis. — Melon (second prize), Netted Cantaloup, Mr. Gimson. — Figs, Brown, Colonel Pemberton. — Apples, Nonesuch, Mr. John Denson.

Culinary Vegetables. Lettuce, Bath Cos, Mr. J. Denson.

Among the cottagers' prizes, the only two named were: — Onions, Spanish, Benjamin Knight, Waterbeach; and Apples, Nonesuch, John Chapman, Wimpole.

The next Show was announced for the 30th of November; and, before the Show closed, a letter from Lord Hardwicke to the secretary was read, recommending an extension of the garden premiums to cottagers. (*Cambridge Chronicle*, Sept. 9.)

CUMBERLAND.

Whitehaven Horticultural Society.—April 29. The following is a list of the prizes, &c.: —

Flowers. Auriculas. Green-edged: 1. Clough's Defiance, Mr. Robert Elliott, gardener to M. Hartley, Esq., Rose Hill (this also won Mr. Pennyfeather's premium for the best of any kind); 2. Buckley's Jolly Tar, Mr. William Sawyers; 3. Moor's Jubilee Green, Mr. John Gaitskell. Grey-edged: 1. Taylor's Ploughboy, Mr. James Clarke, gardener to the Earl of Lonsdale; 2. Kenyon's Ringleader, Mr. John Gaitskell; 3. Ashworth's Rule All, Mr. R. Elliott. White-edged: 1. Lee's Earl Grosvenor, Mr. Robert Elliott; 2. Pillar of Beauty, Mr. William Sawyers; 3. Lee's Venus, Rev. H. Lowther. Self-coloured: 1. Redmain's Metropolitan, Mr. Wm. Sawyers; 2. Berry's Lord Lee, Mr. James Clarke; 3. Clarke's Countess, Mr. Robert Elliott. — Polyanthus: 1. Fletcher's General Hill, Mr. James Clarke; 2. Pearson's Alexander, Mr. Henry Gird; 3. Tantararara, Mr. James Clarke. Seedling, Mr. Isaac Williamson. (*Cumberland Pacquet*, May 3.)

May 17. Prizes were awarded as under: —

Plants. Green-house (neither Ericas nor Geraniums). Best-bloomed: 1. Cèreus flagellifórmis, Mr. R. Elliott; 2. Calceolària integrifòlia, Mr. J. Gaitskell; 3. Calceolària corymbòsa, Mr. Robt. Elliott. — Herbaceous Hardy: 1. Jacobæan Lily, Mr. James Clarke, gardener to the Earl of Lonsdale; 2. Rose-coloured Tree Pæony, Mr. Isaac Williamson. — Heath: 1. *E*rìca mediterrànea, Mr. Alexander Oliver, Gillfoot; 2. *E*rìca herbàcea, Mr. Robt. Elliott, Rose Hill. — Rare Native: 1. *P*olýgonum alpìnum [a native of Italy, not of England], Mr. Robt. Elliott, Rose Hill; 2. *O'*rchis maculàta, Mr. A. Oliver, Gillfoot.

Flowers. Tulips. Flamed Bizarre: 1. Prince de Condé (which also won Mr. Pennyfeather's prize for the best tulip), Miss Fox, St. Bees; 3. Leopoldina, Mr. Thornton, Keswick. Feathered Bybloemen: 1. Buonaparte, Mr. A. Oliver, gardener to T. Hartley, Esq., Gillfoot; 2. Black Baguet, 3. Susiana, and 4. Ceres Primo, Mr. Thornton, Keswick. Feathered Roses: 1. Marshal of France, Mr. Thornton, William Pit; 2. Neat and Clean, Mr. Thornton, Keswick; 3. Do Little, Mr. Isaac Williamson; 4. Sherwood's Lady Crewe, Mr. John Gaitskell, Hall Santon. Flamed Roses: 1. Marshal of France, Mr. Thornton, William Pit; 2. Rose Unique, and 3. Rose Quarto, Mr. Gaitskell. — Geraniums: 1. Triumphant, 2. George the Fourth, 3. Commander, 4. Moore's Majestic, 5. Celestial, Mr. Robert Elliott, Rose Hill.

Fruit. Apples (of 1830). Dessert: 1. Grey Leadington, Mr. Robert Elliott; 2. French Pippin, Mr. John Pennyfeather, gardener to the Earl of Lonsdale. (*Cumberland Pacquet*, May 24.)

August 5. The Carnation Show of this Society was held on August 5. Prizes were awarded as follows: —

Plants. Green-house: 1. Erythrìna *Cr*ísta gálli, Mr. James Clarke; 2. Swainsò*nia* coronillæfòlia, Mr. A. Oliver; 3. Maurándy*a* Barclay*àna*, Mr. J. Clarke. — Herbaceous: 1. Eschschólt*zia* califórnica, Mr. James Graham; 2. Campánula pyramidàlis álba, Mr. Robt. Elliott; 3. *Gentiàna* saponària, Mr. John Gaitskell.

Flowers. Carnations. Scarlet Bizarres: 1. Wild's Perfection, Mr. Wm. Gird; 2. Smalley's Foxhunter, and 3. Lee's Lord Nelson, Mr. James Clarke. Purple Bizarres: 1. Rainbow, Mr. Henry Gird; 2. Gregory's Alfred, and 3. Plummer's Jubilee, Mr. Wm. Gird. Purple Flakes: 1. Turner's Princess, Mr. Wm. Gird; 2. Wood's Commander, Mr. James Clarke; 3. Rawson's Champion, Mr. Henry Gird. Rose Flakes: 1. Rawson's Queen Adelaide, Mr. Wm. Gird; 2. Smiling Beauty, and 3. Miss Foote, Mr. James Clarke. Scarlet Flakes: 1. Chancé, Mr. James Clarke. Seedlings of any colour: 1. Helvellyn, and 2. Ned of the Fell, Mr. Henry Gird. Best Carnation (Mr. Pennyfeather's prize), Wild's Perfection, Mr. Wm. Gird. — Picotees. Purple: 1. Princess Victoria, 2. Mason's Wellington, and 3. Lee's Cleopatra, Mr. James Clarke. Red: 1. Will Stukely, Mr. Wm. Gird; 2. Chilwell Beauty, Mr. James Clarke; 3. Mayor of Northampton, Mr. Isaac Williamson.

Fruit. Melons: 1. Improved Scarlet Flesh, Mr. A. Oliver; 2. Egyptian Red Flesh, Mr. Jas. Clarke. — Nectarines, best six: 1. Old Newington, Mr. James Clarke; 2. Brugnon, Mr. Robert Elliott. — Peaches, best three: 1. Royal George, Mr. James Clarke; 2. Magdalen, Mr. Robert Elliott. — Grapes. Best Bunch of Black or Red: 1. Black Spanish, and 2. Lombardy, Mr. Alex. Oliver. Of White: 1. Tokay, Mr. James Clarke; 2. Early White Muscadine, Mr. Alex. Oliver. Of Grizzly Frontignac, Mr. James Clarke. Gooseberries: Best dish of Champagne, Mr. R. Elliott. — Plums. Best ten: 1. Wilmot, Mr. Robert Elliott; 2. Red Magnum Bonum, Mr. J. Pennyfeather. — Pears, Table. Best plate of nine: Jargonelle, Mr. A. Oliver.

Extra-Prizes. Drósera rotundifòlia, and pelargoniums which have remained in the open ground all the year, Mr. Robt. Elliott, gardener to Milham Hartley, Esq. — Bouquet and seedling georginas, Mr. John Gaitskell, Hall Santon. — A member's premium to that cottager in the neighbourhood whose garden combines the advantages of neatness and utility, was awarded to John Robinson, engine-man, Scale Gill, near Low Hall.

Judges. For Flowers and Fruit: Mr. Connolly of Lancaster, Mr. Joseph Whalley of Liverpool, and Mr. Irving of the firm of Messrs. Hutton, Carlisle. (*Cumberland Pacquet*, Aug. 16.)

DEVONSHIRE.

South Devon and East Cornwall Botanical and Horticultural Society.—The first Anniversary Meeting of this Society took place on Thursday, Feb. 3. Richard Bromley, Esq., of Travers House, Stoke, having taken the chair, the secretary, Dr. Hamilton, read the Committee's Report for the past year. The committee recommended that, as the sphere of its influence had been extended far beyond the narrow limits originally contemplated, and, in place of being confined to the southern parts of Devon and eastern parts of Cornwall, had embraced a much larger extent of the former, and nearly the entire range of the latter, the Society should assume the name of "The Devon and Cornwall Botanical and Horticultural Society." In discussing the revised regulations for the ensuing year, it was resolved that the exhibitions of the Society should be arranged as follows:—The Spring and Autumn Exhibitions to be held at the Royal Hotel, Plymouth; and that in Summer, to take place at the Town Hall, Devonport. With respect to horticultural lectures, and a *Hórtus Siccus*, the Meeting was of opinion, that although both objects were extremely desirable, yet, in the infant state of the Society, it would be premature to enter into any arrangement on the subject. The Meeting was successively addressed by H. Woollcombe, Esq., Counsellor Parham, Dr. Barham, Messrs. Pontey, Evans, Bone, Brown, and others. (*Plymouth and Devonport Weekly Journal*, Feb. 10.)

July 21. Prizes were awarded as under:—

Plants. Stove. Best Climber (in flower), Passiflòra racemòsa, W. Ady, Esq., Gunwharf, Devonport. Best specimen, Quisquàlis índica, Mr. W. Booth, gardener to Sir C. Lemon, Bart. M.P. Shrub in flower, Játropha multífida, Mr. H. Saunders, Kitley. Bulbous, Gesnèr*ia* bulbòsa, Mr. Pontey.—Green-house. Bulbous, Eùcomis punctàta, Mr. J. Ellis, gardener to Capt. Morshead.

Exotic Fruit. Passiflòra edùlis, Mr. J. Ker, Membland.

Culinary Vegetables. Cabbages (second heads, on the original stump of this year), Mr. J. Webb, Pennycomquick.—Kidneybeans, Dwarfs, Mr. J. Brown, Tamerton, Cape Broccoli, Mr. Edmunds, gardener to C. B. Calmady, Esq.—Lettuces, Cos, Mr. Richard Barrett, Portland Place, Morice Town.—Onions, White Spanish, Mr. H. Saunders, Kitley.

Extra-Prizes. Plants and Flowers: Pancràtium odòrum, W. Ady, Esq., Gunwharf. Tobacco, Mr. Roberts, gardener to Commissioner Ross. *E*rìca Bowie*àna*, Mrs. Fownes, Princess Square, Plymouth. *Yúcca* gloriòsa, J. Norman, Esq., Stoke. Strelitz*ia* angustifòlia, J. Norman, Esq., Stoke. Erythrìna laurifòlia, Mr. Keane, Ridgeway. *A*cánthus móllis, R. Dunning, Esq.—For Fruit: New Green-flesh Melon, with an orange rind, T. King, Esq., North Huish. Deadman's Peas, Mr. J. Ker. Wellington Peas, Mr. W. Bray, gardener to G. Strode, Esq., Newnham. Imperial Cape Broccoli, Mr. W. Bray of Newnham. Deptford Onions (last year's), Mr. W. Bray of Newnham.

Cottagers' Prizes. Potato Onions, Mr. J. Trace. Cabbage Lettuces, Mr. J. Stroud. Potato Onions, Mr. Jarman.

Judges. For Plants and Flowers: Capt. M'Adam, R.M., E. W. Churchill, R.M., E. Luscombe, Esq. R.N., and Mr. Rugg. For Fruit: S. Fuge, R. Dunning, G. Soltau, B. Parham, Esqrs., and Mr. Pringle. For Culinary Vegetables: R. Bromley, Esq., Mr. Keane, and Mr. Rendle. For Cottagers' Prizes: Mr. Brown, Mr. Webb, and Mr. Saunders. (*Plymouth and Devonport Journal*, July 28.)

Devon and Exeter Botanical and Horticultural Society.—*Sept.* 29. Among the plants exhibited were: the Crìnum amábile; Zàmia lanuginòsa (a native of Southern Africa, and considered more than 100 years old); the Fìcus elástica, or India rubber plant; the Psídium Cattley*ànum*, or purple guava, with fruit just ripening on its branches; the *Jacaránda* mimosæfòlia; Cánna bícolor; *A*càcia pubéscens; Bonapárte*a* júncea; Sálvia spléndens; Polýgala venústa; Pyrèthrum uliginòsum; the superb plantain; Allamánd*a* cathártica; Plumbàgo capénsis, Hòy*a* carnòsa, Sálvia pseùdo-coccínea, Nyctèrium amazònium, Crìnum americànum, Ipomœ̀a insígnis, Amarýllis grandiflòra, Nèrium cárneum, Phlóx autumnàlis, *A*conìtum japónicum, Erythrolæ̀na conspícua, *A*gératum cœlestìnum, Chelòne atropurpùrea, Rudbéck*ia* chrysomèla, Lantàna scàbra, Gesnèr*ia* bulbòsa, Dracæ̀na terminàlis, Solànum Balbís*ii*, Cýcas revolùta, Sálvia fúlgens, Sálvia involucràta, Crássula oblíqua, Ròche*a* falcàta, several beautiful specimens of Gloxín*ia* cauléscens, Corrǽ*a* speciòsa, Camèll*ia* fimbriàta, Dichorizándra thyrsiflòra, Trachymène cærùlea, Pentstèmon Richardsòn*i*, *A*'ster Nòvæ A'ngliæ, *A*'ster pàtens, Tagèt*es* lùcida, Genti*àna* saponària, *Liàtris* squarròsa, Pancràtium littoràle, Thunbérg*ia* alàta, Hæmánthus puníceus, the Passiflòra coccínea, Stapèl*ia* glaúca, Pùnica nàna, Fúchs*ia* microphýlla, Fúchs*ia* macrostèmon; specimens of the egg plant, from the gardens of Wearman Gifford, Esq.; and Calceolària diffùsa, from Pince and Co.; Booth's seedling Amarýllis in pots. There was a Ròsa índica, a bouquet of roses from which plant was exhibited by Lucombe, Pince, and Co., in April, and from which a bud or two have been cut every day since that period. Among the bouquets of hardy annuals, the yellow sultan shone conspicuous. Several cottagers also obtained great credit in this way. In georginas there was a resplendent show: Dymond and Co. had them worked into a crown (the ermine at the base being admirably imitated by the manner in which the white georgina and violet were interwoven); and many other nurserymen exhibited stars, crowns, and anchors, in composing some of which, nearly 6000 georginas were employed. In a conversation which took place at the dinner which followed the Exhibition, Mr. Gidley, the secretary, stated that, in the spring of the next year, seeds of a variety of useful descriptions would be ready for delivery to subscribers, for the use of cottagers; and they would do a service to these persons if they would make the circumstance generally known in their respective neighbourhoods, stating to him (Mr. Gidley) the amount of application they might wish to make before the end of January next.

Among the prizes, which were very numerous, were the following:—

Plants. Stove or Greenhouse. Bulbous Exotic: 1. Crìnum amábile, and 2. Amarýllis aúlica platypétala, Mr. C. Booth. Tender Exotic, Dichorizándra thyrsiflòra, Mr. C. Booth. Climber or Twiner, Passiflòra coccínea, Mr. R. Saunders.

Flowers. Best Seedling Georgina of any colour (raised in 1830 or 1831), E. Woolmer, Esq. Dwarf Georginas, in pots, not exceeding 3 ft. in height, Mr. C. Booth.

Fruit. Pine-apple (best-flavoured, weighing 2¼ lbs.), Mr. Craggs, gardener to Sir T. D. Acland, Bart. Best dish of White Nectarines, Mr. Nicholls. Best dish of Morello Cherries, Mr. W. Dunsford. Portugal Quinces, E. Woolmer, Esq. Walnuts, Mr. Lamble. Cobnuts, S. C. Walkey. Filberts, J. Sweetland, Esq. Dish of Golden Drop Plums, Mr. Craggs. Grapes in a pot (with 17 bunches), E. Woolmer, Esq.

Culinary Vegetables. Red Beet, Mr. R. Saunders, gardener to C. Hoare, Esq. Seakale Beet, J. Sweetland, Esq. White Carrots, E. Gattey, Esq.

Wine. From grapes grown in the open air in this county: 1. mark G. H.; 2. W. Gifford, Esq. From any other fruit or vegetable of English growth: 1. Gooseberry, W. Gifford, Esq.; 2. Plum, J. Sweetland, Esq. (*Exeter Flying Post*, Oct. 6.)

DORSETSHIRE.

Dorset Horticultural Society. — *April* 27. Mr. Thorne exhibited 150 different specimens of the alpine auricula, which were all seedlings, and raised by himself. Mr. Brown, gardener to Captain Foster of Warmwell, gained a prize for seedling geraniums.

There were also exhibited some fine specimens (not for competition) of the Borònia serrulàta, Chorizèma Henchmánni, Acàcia pulchélla, Calceolària corymbòsa, Cáctus speciòsa, Genísta sphærocárpa, Strelítzia regìnæ, O'xalis sulphùrea supérba, E'pacris grandiflòra, Lechenaúltia formòsa, and a fine dish of oranges from the green-house of Robert Pattison, Esq.; an I'xia grandiflòra, from Lord Ilchester's; and Amarýllis Johnsòni, vittàta, and formosíssima, from Captain Foster's.

Amongst the many green-house plants exhibited (not for competition) by Mr. Coaker, nurseryman, of Upway, were particularly noticed two new seedling geraniums, the Winsoriànum and the Lady Combermere; as well as Lord Combermere, Paul Pry, Anne Boleyn, Spectábile élegans, Hùmei, Victory, &c. &c.; also a beautiful plant of the Crotalària élegans, Verbèna chamædrifòlia, Alonsòa grandiflòra, new purple wallflower, Sparáxis, acacias, polygalas, and Mímulus in sorts; a fine specimen of Edwárdsia microphýlla in bloom, the plant growing in the open border. Also, from the same nursery, a splendid variety of single anemones. (*Dorset County Chronicle*, April 28.)

Sept. 28. The exhibition of fruits, flowers, and vegetables, was considered very superior to those of last year. From the Upway nursery, fine specimens were exhibited (not for competition) of double georginas, fifty sorts; Erythrolæ̀na conspícua; several sorts of new Fúchsia, with many other hardy perennials; also a yellow China rose and crimson Ròsa odoràta. There were also several fine specimens of Lophospérmum erubéscens, Calámpelis scàbra, and double China asters, from the gardens of Messrs. Webber and Seirce, nurserymen, of Merriott; and a fine specimen of the Magnòlia grandiflòra, from Mr. Rutherford's. (*Country Times*, Oct. 3.)

ESSEX.

Chelmsford and Essex Floral and Horticultural Society.—This Society was established in 1824, and has six shows in a year.

The Tulip Show was held on May 10. The tulips exhibited this season were not so fine as have been shown in former seasons. We show the six best tulips, two bybloemens, two roses, and two bizarres: —

Bybloemens: 1. Washington, Cenotaph, Mr. George Howard, Chelmsford; 2. Roi de Siam, Ambassadeur de Hollande, Mr. Pearson of Writtle; 3. Premier Noble, Mr. Jonathan Harris. — Roses: 1. Heroine, Thalestris, Mr. George Howard, Chelmsford; 2. Triomphe Royal, Rose Perle Brillante, Mr. Pearson of Writtle; 3. Triomphe Royal, Rose Cerise Blanche, Mr. Jonathan Harris. — Bizarres: 1. Strong's Benjamin, George the Fourth, Mr. George Howard, Chelmsford; 2. Gloria Mundi, Brutus, Mr. Pearson of Writtle; 3. Brutus, Abercrombie, Mr. Jonathan Harris. — *George Howard, Secretary and Treasurer. Chelmsford, May* 22. 1831.

HEREFORDSHIRE.

Hereford Horticultural Society.— *May* 17. Prizes were awarded as under: —

Flowers and Plants. Tulips. Bizarre: 3. Aigle Noir, 4. Davey's Trafalgar, and 5. Domingo, R. J. Powell, Esq. Bybloemen: 1. Washington, R. J. Powell, Esq.; 3. Ambassadeur de Hollande, R. J. Powell, Esq. Rose: 2. Cerise à belle Forme, R. J. Powell, Esq.; 4. Do Little, R. J. Powell, Esq. — Pelargoniums. Dark: 1. Yeatmaniànum, and 2. Pulchérrimum, Mrs. W. Pateshall; 3. Lord Combermere, Mr. Godsall. Red: 1. Lord Yarborough, 2. Southcotiànum, and 3. Anne Boleyn, Mrs. W. Pateshall. Light: 1. Macránthon supérbum, Mrs. W. Pateshall; 2. Macránthon, Mr. Nott; 3. Mrs. W. Pateshall. — Heath, Erìca quadriflòra, Mrs. W. Pateshall. — Stove Plant, Gloxínia supérba, C. G. Cooke, Esq. (*Hereford Journal*, May 18. and 25.)

June 21. The Prizes were awarded as under: —

Plants. Stove or Green-house: 1. Cáctus speciosíssima, Mrs. W. Pateshall; 2. Maurándya Barclayàna, Mr. Godsall; 3. Calceolària integrifòlia, Sir J. G. Cotterell. — Hardy: 1. Delphínium grandiflòrum, Mr. Godsall; 2. Anchùsa paniculàta, Mrs. J. Phillipps; 3. Bronze Iris, Sir J. G. Cotterell.

Flowers. Ranunculuses. Striped Dark: 1. Púlchrior, Mrs. J. Phillipps; 2. Augustus, Mr. Cranston; 3. Regìna, Mrs. J. Phillipps. Light Striped: 1. Duke of Clarence; 2. Princess of Wurtemberg, and 3. Mélange des Beautés, Mr. Godsall. Selfs: 1. Princess Victoria, Mr. Godsall; 2. Anne, Mrs. J. Phillipps; 3. Melpomene, Mr. Godsall. — Pinks. Black and White: 1. Westlake's Heroine, Mrs. W. Pateshall; 2. Symon's New Eclipse, R. J. Powell, Esq.; 3. Black-eyed Susan, Sir J. G. Cotterell. Red-laced: 1. Barlow's George the Fourth, Mrs. W. Pateshall; 2. Walker's King Alfred, R. J. Powell, Esq.; 3. Davey's Venus, Mrs. J. Phillipps. Purple-laced: 1. Golding's Seedling, Mrs. J. Phillipps; 2. Knight's Lady Ackland, Mrs. W. Pateshall; 3. Stevens's Waterloo, R. J. Powell, Esq. Fancy: 1. Chancellor, Mr. Godsall; 2. Royal George, Mr. Cranston. — Roses. Light: 1. Grande Blanche, and 2. Unique, Mr. Cranston. Dark: 1. Tuscany, Mr. Cranston; 2. Othello, Mrs. J. Phillipps. Red: 1. Mignonne, and 2. Rose du Roi, Mr. Cranston.

Fruit. Cherries: 1. Florence, R. J. Powell, Esq.; 2. Black Tartarian, Mr. Godsall; 3. May Duke, J. S. Gowland, Esq. — Strawberries: 1. Keen's Seedling, and 2. Carolina, R. J. Powell, Esq.; 3. Grove End, Sir J. G. Cotterell; 4. Hautbois, J. S. Gowland. Esq.; 5. Keen's Seedling, Mr. Godsall. — Pine-apples: 1. New Providence, and 2. Queen, C. G. Cooke, Esq. — Melons: 1. Netted Cantaloup, J. E. Graham, Esq.; 2. New, Sir J. G. Cotterell. (*Hereford Journal*, June 29.)

July 21. Prizes were awarded as under: —

Plants. Stove or Green-house: 1. Erythrìna Crísta gálli, Miss Parry; 2. Crássula coccínea, Mrs. W. Pateshall; 3. Nèrium spléndens, Mr. Godsall. — Hardy: 1. Hydrángea horténsis cærùlea, Sir J. G. Cotterell; 2. Potentílla Russelliàna, Mr. Godsall.

Flowers. Carnations. Scarlet Bizarres: 1. Yeomanson's Lord Hill, 2. Smalley's Foxhunter, and 3. Wild's Standard of Perfection, Mrs. W. Pateshall. Crimson Bizarres: 1. Wakefield's Paul Pry, R. J. Powell, Esq.; 2. Davey's Sovereign, Mrs. W. Pateshall Scarlet Flakes: 1. Lacey's Queen, Mrs. W. Pateshall; 2. Madame Mara, R. J. Powell, Esq.; 3. Page's Queen Caroline, Mrs. W. Pateshall. Rose Flakes: 1. Fletcher's Duchess of Devonshire, 2. Bates's Sir J. Plaisten, and 3. Smalley's Wonderful, Mrs. W. Pateshall. Purple Flakes: 1. Bates's Duchess of Devonshire; 2. Strong's Esther, and 3. Princess Charlotte, Mrs. W. Pateshall. — Picotees. Purple: 1. Hogg's Pompadour, 2. Jeeve's Moon-raker, and 3. Lee's Cleopatra, Mrs. W. Pateshall. Red: 1. Pike's Defiance, 2. Will Stukely, and 3. Barron's Miss Neville, Mrs. W. Pateshall. — Georginas. Dark: 1. Black Turban, Mr. Cranston; 3. Miller's Hebe, Sir J. G. Cotterell. Light: 1. Wells's Dwarf Yellow, and 2. Mountain of Snow, Mr. Cranston; 3. Beauty of England, Mrs. W. Pateshall. Red: 1. Claudius Cæsar, Mr. Cranston; 2. Seedling, Mrs. Nott; 3. Morning Star, Mr. Cranston.

Fruit. Gooseberries. Red: 1. Sportsman, and 2. Lancashire Lad, T. Spencer, Esq.; 3. Crown Bob, Mr. Cranston. Green: 1. Sirrell's Green, T. Spencer, Esq.; 2. Green Ocean, and 3. Wilmot's Early, Mr. Godsall. Yellow: 1. Sovereign, 2. Viper, and 3. Rockwood, Mr. Godsall. — Grapes: 1. Muscat of Alexandria, Archdeacon Prosser; 2. Black Hamburgh, C. G. Cooke, Esq. — Melons: 1. Netted Cantaloup, J. S. Gowland, Esq.; 3. Black Rock, R. J. Powell, Esq. — Apricots: 1. Moorpark, Sir J. G. Cotterell; 2. Turkey, Mr. John Thomas. — Plums: 1. Orleans, Sir J. G. Cotterell; 2. Blue Impératrice, C. G. Cooke, Esq. — Currants, Red, Mr. Knight's New Seedling, R. J. Powell, Esq. (*Hereford Journal*, July 27.)

Sept. 22. A georgina, exhibited by the gardener of Sir J. G. Cotterell, displayed what has long been a great desideratum amongst florists, distinct stripes: the colour is a deep crimson of the richest velvet tint; but from the base of, and reposing on, each broad petal, springs one or two smaller ones, which are beautifully striped with pink, and which, it is hoped, will prove permanent: the flower is large, well formed, and, although very double, will produce seed. Prizes were awarded as under: —

Flowers. Georginas. Crimson: 1. Worcester Hero, and 2. Coronation, Mr. Godsall; 3. Anemone-flowered, Mr. Cranston. Scarlet: 1. Romulus, and 2. Claudius Cæsar, Mr. Cranston; 3. Constantia, Mrs. W. Pateshall. Purple: 1. Atropurpùrea, and 2. Anemone-flowered, Mr. Cranston; 3. Seedling, Sir J. G. Cotterell. Light: 1. Mountain of Snow, Mr. Cranston; 2. Actæon, Mrs. Nott; 3. Painted Lady, Mr. Godsall. Striped variety, Seedling, Sir J. G. Cotterell.

Fruit. Nectarines: 1. Scarlet, 2. Roman, and 3. Seedling, Sir J. G. Cotterell. — Apples. Early Dessert: 1. Ribston Pippin, Sir J. G. Cotterell; 2. Peach Apple, T. Spencer, Esq.; 3. Albion Apple, Sir J. G. Cotterell. Late Dessert: 1. Nonpareil, and 2. Margil, Mrs. J. Phillipps; 3. Garnons Apple, Sir J. G. Cotterell. Culinary: 1. Blenheim Orange, and 2. Hawthorndean, T. Spencer, Esq; 3. Royal Russet, Mr. John Thomas. — Pears. Early Dessert: 1. Gansell's Bergamot, Mr. J. Thomas; 2. Orange Bergamot, R. J. Powell, Esq. Late Dessert: 1. Crassane, J. S. Gowland, Esq.; 2. Chaumontelle, R. J. Powell, Esq.; 3. Duchesse d'Angoulême, Mrs. Parkinson. — Grapes. Out-door: 1. Royal Muscadine, and 2. Black Esperione, Mr. J. Thomas. — Peaches: 1. Seedling, 2. Royal George, and 3. French Mignonne, Sir J. G. Cotterell. (*Hereford Journal*, Sept. 28.)

Ross Horticultural Society. — *May* 18. Prizes were awarded as under: —

Plants. Stove: 1. Cáctus speciosíssima, Mr. J. D. Wheeler; 2. Amarýllis Johnsòn*i*, and 3. Amarýllis *Belladónna*, Mr. Reynolds; 4. Cáctus Jenkinsòn*i*, Mr. J. C. Wheeler; 5. Cáctus speciòsa, John Cooke, Esq. — Green-house: 1. Calceolària, and 2. Polýgala latifòlia, John Cooke, Esq.; 3. Borònia serrulàta, Messrs. Breese and Reynolds; 4. Cálla æthiópica, John Cooke, Esq.; 5. Maurándya Barclayàna, Mrs. Robertson. — Hardy: 1. I'ris susiàna, Mr. J. C. Wheeler; 2. Antennària dioica, Mrs. Robertson; 4. *Tróllius* europæ'us, John Cooke, Esq.; 5. Dodecàtheon Meád*ia*, Mr. Reynolds. — American: 1. Azàlea índica álba, John Cooke, Esq.; 2. Azàlea floribúnda, and 3. Rhododéndron catawbiénse, Mr. J. C. Wheeler; 4. Azàlea póntica, Messrs. Breese and Reynolds; 5. Azàlea speciòsa màjor, Mr. J. C. Wheeler. — Heaths: 1. Vestìta coccínea, and 2. Perspícua nàna, Miss Trusted; 3. Vestìta fúlgida, Mrs. Platt; 4. Propéndens, Mr. J. D. Wheeler; 5. Hýbrida, Mr. J. C. Wheeler.

Flowers. Tulips. Bizarres: 1. Wade's King, and 2. Violet Alexander, Mr. J. C. Wheeler; 3. Belle Actrice, T. Rudge, Esq.; 4. Captain Lambton, Mr. P. Baylis; 5. Count Platoff, Mr. C. Cocks. Bybloemens: 1. Holmes's King, T. Rudge, Esq.; 2. Duchess of Wellington, and 3. La Plus Belle, Mr. J. C. Wheeler; 4. Duchesse d'Oldenburgh, Mr. Purchas; 5. Washington, Mrs. Robertson. Roses: 1. Triomphe Royal, Mr. Purchas; 2. Walworth Rose, 3. Adonis, and 4. Rose Brillante, Mr. J. D. Wheeler; 5. Pucelle d'Orléans, Messrs. Breese and Reynolds. Verports: 1. Incomparable Hebe, and 2. Daphne, W. Gillman, Esq.; 3. Lady Exeter, Mr. J. C. Wheeler; 4. Domingo, W. Gillman, Esq.; 5. Hebe, Mr. P. Baylis. Rigauts: 1. Hollánd*ia*, 2. Le Grand, and 3. Dido, W. Gillman, Esq.; 4. Bruno, Mr. C. Cocks; 5. Black Rigaut, Mr. J. D. Wheeler. Baguets: 1. Norwich Black Baguet, Mr. Reynolds; 2. Duchess of Tuscany, Mr. C. Cocks; 3. Habit Royal, W. Gillman, Esq.; 4. Elizabeth, Mr. C. Cocks; 5. Habit du Roi, W. Gillman, Esq. — Anemones. Dark: 1. Cardinal de Fleuri, Mr. T. Ryder; 2. Triomphe Colombine, and 3. Reine de France, Messrs. Breese and Reynolds; 4. Walworth, Mr. T. Edwards; 5. Duchesse de Croix, Messrs. Breese and Reynolds. Light: 1. Pure Blanche, Messrs. Breese and Reynolds; 2. La Belle Venus, J. F. Willis, Esq.; 3. Sandre, Mr. T. Ryder; 4. White Swan, and 5. Jasper Grisdeline, J. F. Willis, Esq. Scarlet or Red: 1. Lord North, and 2. Grand Czar, Mr. T. Ryder; 3. Scarlet, Mr. J. C. Wheeler; 4 High Admiral, Messrs. Breese and Reynolds; 5. Columba, Mr. T. Edwards. — Pelargoniums. Dark: 1. Germanicus, John Cooke, Esq.; 2. Davey*ànum*, Mrs. Platt; 3. Lord Combermere, and 4. Hùme*i*, John Cooke, Esq.; 5. Colley*ànum*, Mr. J. D. Wheeler. Scarlet or Red: 1. Lord Yarborough, and 2. Spectábile striàtum, John Cooke, Esq.; 3. Invincible, Mr. J. D. Wheeler; 4. Moore's Victory, Mrs. Platt; 5. Anne Boleyn, John Cooke, Esq. Light: 1. Macránthon, Mrs. Platt; 2. Millèr*i*, John Cooke, Esq.; 3. Cleopatra, Mr. J. D. Wheeler; 4. Cleopatra superba, Mrs. Platt; 5. Ornàtum, John Cooke, Esq. — Nosegay, Mr. Reynolds.

Culinary Vegetables. Asparagus: 1. Mr. T. Ryder; 2. R. Compton, Esq.; 3. Mr. Holbert 4. Mr. T. Ryder; 5. Mr. Holbert. (*Hereford Journal*, May 25.)

June 22. Prizes were awarded as under: —

Plants. Stove or Green-house: 1. Hóy*a* carnòsa, John Cooke, Esq.; 2. Nèrium spléndens, Mr. J. D. Wheeler; 3. Calceolària corymbòsa, Mr. J. C. Wheeler; 4. Amarýllis Johnsòn*i*, Mr. Reynolds; 5. Cáctus speciòsa, John Cooke, Esq. — Pelargoniums. Dark: 1. Yeatman*iànum*, Mr. J. C. Wheeler; 2. Hùme*i*, and 3. Germanicus, John Cooke, Esq.; 4. Malachræfòlium, Mrs. Platt; 5. Davey*ànum*, Rev. T. Underwood. Scarlet or Red: 1. Lord Yarborough, and 2. Anne Boleyn, J. Cooke, Esq.; 3. Agrippina, Rev. T. Underwood; 4. Lady Liverpool, Mrs. Platt; 5.

Moore's Victory, John Cooke, Esq. Light: 1. Yoúngii, Mr. J. C. Wheeler; 2. Millèri, John Cooke, Esq.; 3. Macránthon supérbum, Mrs. Platt; 4. Apollo, John Cooke, Esq.; 5. Macránthon, Mrs. Platt. — Heaths: 1. Ventricòsa supérba, Breese and Reynolds; 2. Irbyàna, Mr. J. C. Wheeler; 3. Ventricòsa prǽgnans, and 4. Tricolor, Miss Trusted; 5. Mutábilis, Mr. J. C. Wheeler. — Hardy: 1. Dictámnus Fraxinélla, Mr. Purchas; 2. Delphínium grandiflòrum, Mr. Reynolds; 3. Anchùsa paniculàta, Mrs. Robertson; 4. Digitàlis purpùrea-álba, Mr. Reynolds; 5. Antirrhìnum màjus bícolor, Mrs. Platt. — American: 1. Kálmia latifòlia, Mr. J. C. Wheeler; 2. Azàlea álba, Mr. J. D. Wheeler.

Flowers. Ranunculuses. Dark: 1. L'Œil Noir, and 2. Comley's Royal Purple, Mr. Crump; 3. Naxara, Mr. J. D. Wheeler; 4. Admiral Keppel, and 5. Rose Suprême, Mr. Crump. Light: 1. Eliza, Mr. Crump; 2. Linnet, Mr. J. D. Wheeler; 3. Argentina, Mr. Crump; 4. Cox's Buff, and 5. Dr. Franklin, Mr. J. D. Wheeler. Striped: 1. Cour de France, Mr. Crump; 2. Strong's Eliza, Mr. J. C. Wheeler; 3. Mélange des Beautés, Mr. Crump; 4. Suprema, Mr. J. C. Wheeler; 5. Thompson's Queen, John Cooke, Esq. Mottled: 1. Cour de France, Mr. J. D. Wheeler; 2. Nomius, Mr. Crump; 3. Prince Galitzin, Mr. J. D. Wheeler; 4. Le Téméraire, and 5. Notcutt's Coffee and Gold, Mr. Crump. — Pinks. Black and White: 1. Corbett's Leopold, John Cooke, Esq.; 2. Queen of June, Mr. J. C. Wheeler; 3. Eaton's George the Fourth, John Cooke, Esq.; 4. Westlake's Heroine, Mr. T. Edwards; 5. Symond's New Eclipse, John Cooke, Esq. Purple-laced: 1. Buffalo's Beauty, Mr. John Hooper; 2. Davey's Mrs. Ford, Mr. T. Edwards; 3. Spanish Patriot, W. Gillman, Esq.; 4. Bow's Cato, Mr. Holbert; 5. Bow's Suwarrow, Breese and Reynolds. Red-laced: 1. Cheese's Miss Cheese, and 2. Lord Byron, Mr. John Hooper; 3 Stevens's Waterloo, K. Evans, Esq.; 4. Mr. Morris, Mr. John Hooper; 5. Thompson's Princess Charlotte, W. Gillman, Esq. Selfs and Fancies: 1. George the Fourth, Mr. John Hooper; 2. Seedling, Mr. J. D. Wheeler; 3. Blush and Beauty, Mr. Crump; 4. Barratt's Collingwood, Mr. Ryder; 5. Aurora Borealis, W. Gillman, Esq. — Roses. Dark: 1. L'Ombre Agréable, Mr. Reynolds; 2. Pluto, Mrs. James Rudge; 3. Mottled Purple, J. F. Willis, Esq.; 4. Tuscany, Mr. Reynolds; 5. Portland, Mr. J. C. Wheeler. Light: 1. Unique, Mr. Holbert; 2. New Maiden's Blush, Mr. Reynolds; 3. Brown's Superb, Breese and Reynolds; 4. New Blush, Mr. J. C. Wheeler; 5. White Moss, Mr. T. Edwards. Scarlet or Red: 1. Wellington, K. Evans, Esq.; 2. Ranunculus, Breese and Reynolds; 3. Scarlet Provence, Mr. T. Edwards; 4. Nonpareil, Mr. Reynolds; 5. Carmine, Mr. Reynolds. — Nosegay, Mr. Reynolds.

Fruit. Cherries: 1. Mayduke, R. Compton, Esq.; 2. Early May, Mrs. Platt; 3. Elton, R. Compton, Esq.; 4. Bigarreau, Mr. Sharp; 5. White Hart, Mr. Purchas. — Strawberries: 1. Wilmott's Superb, Colonel Money; 2. Keen's Seedling, Mr. James Rudge; 3. Hautboy, Breese and Reynolds; 4. Scarlet Roseberry, and 5. Carolina, K. Evans, Esq. (*Hereford Journal*, June 29.)

July 27. Prizes were awarded as under: —

Plants. Stove or Green-house: 1. Erythrìna Crísta gálli, Breese and Reynolds; 2. Fúchsia grácilis, Rev. T. Underwood; 3. Eùcomis punctàta, John Cooke, Esq.; 4. Nèrium spléndens, and 5. Lantàna aculeàta, Mr. J. D. Wheeler. — Hardy: 1. Hydrángea, John Cooke, Esq.; 2. Veràtrum nìgrum, Mr. Reynolds; 3. Potentílla formòsa, W. Gillman, Esq.; 4. Coreópsis lanceolàta, Mr. Reynolds; 5. Digitàlis ferrugínea, W. Gillman, Esq. — Heaths: 1. Viridiflòra, Miss Trusted; 2. Savileàna, Breese and Reynolds; 3. Ampullàcea, Mrs. Platt; 4. Irbyàna, Mr. J. C. Wheeler; 5. Juliàna, Miss Trusted.

Flowers. Carnations. Scarlet Bizarres: 1. Sir Hudibras, and 2. Hopkins's Grenadier, J. F. Willis, Esq.; 3. Landon's Sir J. Boughey, 4. Davey's Sovereign, and 5. Champion's Seedling, Mr. Crump. Crimson Bizarres: 1. Cartwright's Rainbow, Mr. J. D. Wheeler; 2. Hoyle's Magnificent, and 3. Davey's Rainbow, J. F. Willis, Esq.; 4. William the Fourth, Mr. Crump; 5. Penley's Delight, J. F. Willis, Esq. Scarlet Flakes: 1. Bright Phœbus, Mr. Crump; 2. Pearson's Madame Mara, J. F. Willis, Esq.; 3. Coulston's No. 1., Mr. J. D. Wheeler; 4. Stoniard's Britannia, Mr. T. Edwards; 5. Lacey's Queen, Colonel Money. Purple Flakes: 1. Piggott's Amethyst, 2. Symond's Byron, 3. Wood's Commander, and 4. Crump's Seedling, Mr. Crump; 5. Wilmer's Defiance, J. F. Willis, Esq. Rose Flakes: 1. Wilmer's Commander, J. F. Willis, Esq.; 2. Florilla, Breese and Reynolds; 3. Pearson's Sir George Crew, J. F. Willis, Esq.; 4. Beauty of the Valley, Mr. Crump; 5. Fletcher's Duchess of Devonshire, Breese and Reynolds. — Picotees. Purple: 1. Lovely Emma, Mr. J. D. Wheeler; 2. Pulling's Offspring, Mr. Crump; 3. Mr. T. Edwards; 4. Hogg's Penelope, Breese and Reynolds; 5. Salamander, Mr. T. Edwards. Red: 1. Man of Ross (seedling), Mr. T. Edwards; 2. Beauty of Strentham, Breese and Reynolds; 3. Cornfield's Duchess of Bedford, and Louis the Sixteenth, J. F. Willis, Esq.; 5. Sophia, Mr. Crump. — Georginas. Dark Double: 1. Black Turban, Mr. Reynolds; 2. Breese's Venus of Rudhall, and 3. Breese's Man of Ross, W. Gillman, Esq.; 4. Globe Crimson, K. Evans, Esq.; 5. Superbíssima, E. Prichard, Esq. Light Double: 1. Mountain of Snow, Mr. J. C. Wheeler; 2. Scarlet Turban, Mr. Cary Cocks; 3. Royal Dwarf Yellow, Mr. Holbert; 4. Coccínea floribúnda (seedling), W. Gillman, Esq.; 5. Sulphuret, Mr. Cary Cocks.

Fruit. Gooseberries. Red: 1. Roaring Lion, and 2. Crown Bob, Mr. P. Baylis; 3. Raspberry, K. Evans, Esq.; 4. Rough Red, Rev. L. Robertson; 5. Warrington, John Cooke, Esq. Green: 1. Eagle, Mr. Crump; 2. Green Chisel, Colonel Money; 3. Whitesmith, Mr. T. Edwards; 4. Seedling, and 5. Green Cecil, Mr. Holbert. Yellow: 1. Moore's White Bear, Colonel Money; 2. Bumford's Golden Chain, Mr. P. Baylis; 3. Viper, J. Cooke, Esq.; 4. Yellow d'Or, Mr. Holbert; 5. Scorpion, Colonel Money. — Grapes: 1. Black Amber, and 2. Saint Peter's, Colonel Money; 3. Old Sweetwater, E. Prichard, Esq.; 4. New Sweetwater, J. Cooke, Esq. (*Hereford Journal*, August 3.)

HUNTINGDONSHIRE.

Huntingdonshire Horticultural Society. — April 27. The Annual Spring Show was held on April 27., when prizes were awarded as under: —

Flowers. Auriculas. Green-edged: 1. Thompson's Revenge, Mr. Wood; 2. Bearless's Superb, Mr. Fordham; 3. Parkinson's Trafalgar, and 4. Metcalf's Lancashire Hero, Mr. Hyland. Grey-edged: 1. and 2. Kenyon's Ringleader, 3. Ashworth's Rule all, and 4. Thompson's Revenge, Mr. Hyland. White-edged: 1. and 2. Taylor's Glory, Mr. Hyland; 3. Taylor's Incomparable, and 4. Popplewell's Conqueror, Mr. Dally. Self: 1. Breaker's Queen Anne (a superb flower, beating all the named flowers), Mr. Wood; 2. Hyland's Juba, Mr. Hyland. Seedling, Hyland's Lady Caroline Montague, Mr. Hyland. — Polyanthus: 1. Bearless's Superb, Mr. Hyland; 2. Pearson's Alexander, Mr. Fordham; 3. Bearless's Superb, Mr. Wood; 4. Beauty of Over, Mr. Franklin. Seedling, Earl Grey, Mr. Franklin. — Hyacinth. Double Blue: 1. Pasquin, Mr. Raye; 2.

Prince Henry of Prussia, Mr. Franklin; 3. Prince Henry of Prussia, Mr. Wood. Double Red or Pink: 1. Honour of Amsterdam, Mr. Raye; 2. Honour of Amsterdam, Mr. Wood; 3. Flos sanguíneus, Mr. Franklin. Double White: 1. and 2. Groot Voorst, Mr. Dall; 3. Groot Voorst, Mr. Raye. — Polyanthus Narcissus. Yellow, Soleil d'Or, Mr. Dale. White, Grand Monarque, Mr. E. Laindy.

***Fruit.* Dessert Apples: 1. Nonpareil (preserved in box with sand), Mr. Raye; 2. Baxter's Pearmain (preserved in box with sand), Mr. Dally. — Kitchen Apples: 1. Norfolk Beauffin (packed in box with hay and straw to exclude the air), Mr. Middleton; 2. French Crab (gathered dry, and packed in straw so as to exclude the air), Mr. Giddings. — Strawberries: Roseberries, Mr. Middleton.**

***Culinary Vegetables.* Early Potatoes: Mr. Bleet (nine weighed 1 lb. 7 oz.). — Rhubarb: 1. Hybrid, 5 lbs. 11¼ oz., Mr. Bleet; 2. Wilmot's Green, 4 lbs. 7½ oz., Mr. Giddings. — Lettuce: 1. Bath Cos, Mr. Dally; 2. Bath Cos, Mr. Giddings.**

July 27. At the Annual Summer Show prizes were awarded as under: —

Flowers. Carnations. Scarlet Bizarre: 1. Wild's Perfection, Mr. Sharp; 2. Wild's Perfection, Mr. Twitchett; 3. Wild's Perfection, Mr. Franklin; 4. Wild's Perfection, Mr. Nutter. Purple Bizarre: 1. Gregory's Alfred, Mr. Sharp; 2. Gregory's Alfred, Mr. Franklin; 3. Gregory's Alfred, Mr. Twitchett; 4. Gregory's Alfred, Mr. Nutter. Scarlet Flakes: 1. Doctor Barnes, Mr. Dearlove; 2. Doctor Barnes, Mr. Sharp; 3. Doctor Barnes, Mr. Twitchett; 4. Doctor Barnes, Mr. Bleet. Purple Flakes: 1. British Flag, Mr. Nutter; 2. Turner's Princess, Mr. Twitchett; 3. Bellerophon, Mr. Sharp; 4. Princess Charlotte, Mr. Dearlove. Rose: 1. Devonshire, Mr. Sharp; 2. Devonshire, Mr. Twitchett; 3. Devonshire, Mr. Fordham; 4. Devonshire, Mr. Franklin. Best in any colour in addition: Wild's Perfection, Mr. Sharp. Seedling in any colour: 1. Walter Scott, Mr. Wood; 2. Earl Grey, Mr. Raye. — Picotees. Purple: 1. Miss Willoughby, Mr. Franklin; 2. Miss Willoughby, Mr. Twitchett; 3. Miss Willoughby, Mr. Raye; 4. Miss Willoughby, Mr. Nutter. Red Dark: 1. Wood's Comet, Mr. Raye; 2. Bringclore Champion, Mr. Twitchett; 3. Wood's Comet, Mr. Dally; 4. Smith's Victory, Mr. Sharp. Scarlet or pale Red: 1. Russell's Incomparable, Mr. Nutter; 2. Russell's Incomparable, Mr. Sharp; 3. Russell's Incomparable, Mr. Twitchett; 4. Russell's Incomparable, Mr. Dearlove. Rose or Pink: 1. Granta, Mr. Fordham; 2. Granta, Mr. Raye; 3. Granta, Mr. Nutter; 4. Queen Caroline, Mr. Twitchett. Yellow: 1. Howlet's Paragraph, Mr. Dearlove; 2. Zenobia, Mr. Sharp; 4. Louis Seize, Mr. Twitchett. Best in any colour in addition: Russell's Incomparable, Mr. Nutter. Seedling in any colour: 1. Beauty of Ripton, Mr. Dally; 2. Rose Imperial, Mr. Raye. — Double Georginas: 1. Nobla, Augusta, and Apollo, Mr. Slight; 2. Countess of Liverpool, Venusta, and Perfecta, Mr. Franklin; 3. Robusta, Donna Maria, and Squib's White, Mr. Wood; 4. Augusta, Imperiosa, and Eximia, Mr. Nutter.

Fruit. Gooseberries. Red: 1. Roaring Lion, 24 dwts. 4 grs., Mr. Hyland; 2. Roaring Lion, 23 dwts., Mr. Bleet; 3. Roaring Lion, 22 dwts. 21 grs., Mr. Giddings; 4. Roaring Lion, 21 dwts. 22 grs., Mr. Askew. Yellow: 1. Jolly Gunner, 21 dwts. 19 grs., Mr. Askew; 2. Golden Globe, 17 dwts. 18 grs., Mr. Hyland; 3. Golden Sovereign, 16 dwts. 10 grs., Mr. Franklin; 4. Jolly Gunner, 16 dwts. 9 grs., Mr. Fordham. Green: 1. Green Ocean, 20 dwts. 4 grs., Mr. Giddings; 2. Green Ocean, 20 dwts. 1 gr., Mr. Fordham; 3. Angler, 19 dwts. 18 grs., Mr. Bleet; 4. Angler and Ocean, 17 dwts. 12 grs., Mr. Wood and Mr. Hyland. White: 1. Governess, 23 dwts. 22 grs., Mr. Hyland; 2. Whitesmith, 21 dwts. 16 grs., Mr. D. Veasey; 3. Eagle, 20 dwts. 16 grs., Mr. Giddings; 4. Eagle, 19 dwts. 13 grs., Mr. Fordham. In any colour in addition: Roaring Lion, 24 dwts. 4 grs., Mr. Hyland. Seedling, White: Marquess Lothian, 22 dwts., Mr. Hyland. Fewest to the Pound: 1. 14 Gooseberries, Mr. Hyland; 2. 14 Gooseberries, Mr. Bleet; 3. 14 Gooseberries, Mr. Wood. — Currants (fewest to the Pound), White: 1. 20 Bunches, Mr. Giddings; 2. 32 Bunches, Mr. Bleet; 3. 33 Bunches, Mr. Slight. Red: 1. 37 Bunches, Mr. Giddings; 2. 42 Bunches, Mr. Hyland. — Cherries: 1. May Duke, Mr. Dall; 2. Bigarreau, Mr. Bleet; 3. May Duke, Mr. Dally.

LANCASHIRE.

Bolton Floral and Horticultural Society. — *May* 27. Prizes were awarded to **the following amongst numerous others: —**

Cèreus speciosíssimus (the first prize in stove plants), Potatoes, French Beans, and Lettuces, with numerous others, W. Hulton, Esq. Calceolària Gillen*iàna* [Fothergíll*ii?*], a beautiful Green-house Plant, first prize, R. Holland, Esq. (*Bolton Chronicle*, May 28.)

July 6. The Third Meeting for the season, of this Society, was held in the **large room at the Commercial Inn, when the exhibition of flowers, stove, green-house and herbaceous plants, fruits, &c., far exceeded any former one. The stage of pinks was said to be the most splendid ever witnessed in this county. The roses and ranunculuses were not so good, owing to the extreme forwardness of the season. (*Wheeler's Manchester Chronicle*, July 9.)**

August 5. The specimens of plants and flowers shown were excellent, but in **fruit there was an evident falling off. The principal prizes were disposed of as under: —**

Stove Plant, Brugmáns*ia* suavèolens, James Ormrod, Esq. Green-house Plant, *N*èrium Oleánder var. spléndens, Roger Holland, Esq. Second Green-house Plant, Fúchs*ia* grácilis, R. Barlow, Esq. Melon, James Cross, Esq., a most beautiful specimen, weighing 10¼ lbs. Scarlet Bizarre Carnation (Foxhunter), Mr. John Walsh. Bizarre Carnation (Rainbow), Mr. Turner. Scarlet Flake Carnation (Madame Mara), Mr. Mawdsley. Pink Flake Carnation (Conquering Hero), Mr. Jos. Ashworth. (*Bolton Chronicle*, August 13.)

Lancaster Floral and Horticultural Society. — *July* 26. Prizes were awarded **as under: —**

***Plants.* Green-house: 1. Erythrìna *l*aurifòlia, and 2. Alstrœmèr*ia Pelegrìna*, Mr. Hargreaves; 3. *P*lumbàgo, J. Dockray, Esq. Hardy: 1. *H*ibíscus (new), and 2. Salpiglóssis atropurpùrea, Mr. Hargreaves; 3. Commelìn*a* tuberòsa, Miss Dalton; 4. Campánula pyramidàlis álba, Mr. Darwen.**

***Flowers.* Carnations. Scarlet Bizarres: 1. Wild's Perfection, and 2. Ely's Mayor of Ripon, Messrs. Connelly and Son; 3. Triumphant, Mr. Hargreaves; 4. Smalley's Foxhunter, Messrs. Connelly and Son; 5. Royal Sovereign, Mr. Hargreaves; 6. Lee's Lord Nelson, Messrs. Connelly and Son; 7. Salamander, Mr. Hargreaves. Pink Bizarres: 1. Wakefield's Paul Pry, Messrs. Connelly and Son; 2. Squire Trafford, Mr. Hargreaves; 3. Potter's Sir William, 4. Plumber's Lord Denbigh, 5. Lee's Duke of Kent, 6. Plummer's Waterloo, and 7. Ive's Prince Leopold, Messrs. Connelly and Son. Purple Flakes: 1. Leighton's Bellerophon, and 2. Oddie's Henry**

Hunt, Messrs. Connelly and Son; 3. Turner's Princess, Mr. Hargreave's; 4. Wood's Commander, and 5. Bates's Wellington, Messrs. Connelly and Son. — Scarlet Flakes: 1. Pearson's Rising Sun, 2. Leighton's Atlas, 3. Faulkner's Salamander, 4. Waterhouse's Caroline, 5. Yeomanson's Commander, 6. Hufton's Mr. Hobhouse, and 7. Thornicroft's Blucher, Messrs. Connelly and Son. Pink Flakes: 1. Clegg's Smiling Beauty, Mr. Hargreaves (Penny Street); 2. Faulkner's Eliza, and 3. Leighton's Miss Foote, Messrs. Connelly and Son; 4. Devonshire, Mr. Hargreaves (Penny Street); 5. Pearson's Lord Essex, 6. Plant's Lady Hood, and 7. Yates's Supreme, Messrs. Connelly and Son. Seedling Carnation, Mr. Forbes. — Picotees. Purple: 1. Lee's Cleopatra, 2. Mason's Wellington, 3. Faulkner's Earl Wilton, 4. Lee's Royal Purple, and 5. Faulkner's Hannibal, Messrs. Connelly and Son; 6. Duchess of Rutland, Captain Wilkinson; 7. Clark's Doctor Syntax, Mr. Forbes. Red: 1. Lee's Will Stukely, 2. Faulkner's Salamanca, and 3. Kenny's Incomparable, Messrs. Connelly and Son; 4. Pyke's Defiance, and 5. Chilwell Beauty, Mr. Hargreaves (Penny Street); 6. Mayor of Northampton, Mr. Darwen.

Fruit. Melons: 1. Duchess of Hamilton; 2. Mr. Forbes. — Heaviest Bunch of Grapes: Black Hamburgh, John Stout, Esq. Best Bunch of Grapes: Tokay, Duchess of Hamilton. — Gooseberries. Red: 1. Roaring Lion, Mr. Townley; 2. Prince Regent, Mr. T. Darwin. Yellow: 1. Royal Gunner, and 2. Cottage Girl, Mr. Salthouse. Green: 1. Troubler, Mr. Burrow; 2. Green Ocean, Mr. Salthouse. White: 1. White Eagle, and 2. Wellington's Glory, Mr. Salthouse.

Premiums. Branch of Passiflòra racemòsa, Messrs. Connelly and Son; Flowers of Tigrídia pavònia, Captain Wilkinson; Flowers of Cobæ̀*a* scándens, Miss Dalton. Apples, Keswick Codlin, R. F. Bradshaw, Esq.

Lancaster Annual Gooseberry Show.—This show was held at the Shakspeare Tavern on July 23. The fruit was not so heavy as that shown last year; the cause assigned was the dryness of the weather, which stopped their growth, and ripened them too early; this being followed by heavy rains, the largest burst before the day of weighing. The crop generally is good and fine-flavoured. (*Lancaster Herald*, July 30.)

Manchester Floral and Horticultural Society.—May 23. Prizes were awarded as under: —

Plants. Stove: 1. *C*áctus Jenkinsòn*i* (premier), and 2. Calánthe *v*eratrifòlia, Mrs. Hobson; 3. *C*áctus speciòsa, Mr. J. Darbyshire; 4. Mùs*a* coccínea, C. Wood, Esq.; 5. Amarýlli*s* vittàta, 6. Ardísia paniculàta, and 7. Mantísia saltatòria, Mrs. Hobson; 8. Gloxín*ia* cauléscens, Rev. I. Clowes; 9. *C*rìnum erubéscens, Richard Potter, Esq.; 10. Amarýlli*s* regìnæ, Rev. I. Clowes; 11. *C*áctus speciosíssima, Mrs. Hobson; 12. Begòn*ia* argyrostígma, T. H. Hadfield, Esq. Greenhouse: 1. Eutáxia púngens (premier), William Bow, Esq.; 2. Boròn*ia* dentàta, Mrs. Hobson; 3. Calceolària bícolor, William Bow, Esq.; 4. Boròn*ia* serrulàta, Rev. I. Clowes; 5. Bossiæ̀*a* rùfa, Mrs. Hobson; 6. Calceolària Gilleni*àna* [Fothergíll*ii*?], W. Bow, Esq.; 7. Grevílle*a a*canthifòlia, Mrs. Hobson; 8. Dracophýllum grácile, W. Bow, Esq.; 9. Fúchs*ia* microphýlla, W. Garnett, Esq.; 10. E'pacris pulchélla, Rev. I. Clowes; 11. *P*olýgala cordifòlia, and 12. Grevílle*a* *r*osmarinifòlia, Mrs. Hobson. — Ericas: 1. Exímia (premier), and 2. Moschàta, William Bow, Esq.; 3. Calycìna capitàta, Mrs. Hobson; 4. Thunbérg*ii*, 5. Ventricòsa álba, 6. Vestìta coccínea, 7. Prínceps, 8. Vestìta fúlgida, and 9. Odoràta, William Bow, Esq.; 10. Ventricòsa coccìnea, Mrs. Hobson; 11. Ventricòsa cárnea, J. Darbyshire, Esq.; 12. *C*erinthòides, N. Phillips, Esq. — Pelargoniums. Dark Grounds: 1. Paul Pry, 2. De Vere, 3. Lord Yarborough, and 4. Barclay*àna*, Jon. Dawson, Esq.; 5. Defiance, and 6. Naírn*ii*, William Garnett, Esq.; 7. Lord Combermere, Jon. Dawson, Esq.; 8. Davey*ànum*, William Garnett, Esq. Light Grounds: 1. Mungo Park, William Garnett, Esq.; 2. Macránthon, George Hole, Esq.; 3. Majéstum, T. H. Hadfield, Esq.; 4. Yoúng*ii*, George Hole, Esq. — Hardy Shrubs: 1. *C*ýtisus purpùreus, C. Wood, Esq.; 2. *R*hododéndron pónticum álbum, Mr. C. Moore; 3. *Pæòn*i*a Moùtan*, William Bow, Esq.; 4. *R*hododéndron pónticum *r*òseum, Mr. C. Moore; 5. Azàlea speciòsa, Mr. S. Faulkner; 6. Azàlea cùprea, Mr. G. Cunningham; 7. *R*hododéndron catawbiénse var., R. Millington, Esq.; 8. Azàlea papilionàcea, and Azàlea viscòsa, Mr. S. Faulkner; 10. *R*hododéndron catawbiénse, William Bow, Esq. — Herbaceous: 1. Cypripèdium spectábile, William Garnett, Esq.; 2. *L*upìnus polyphýllus, Jon. Dawson, Esq.; 3. *D*odecàtheon Meád*ia* gigantèa, Mr. C. Moore; 4. Pentstèmon speciòsus, William Bow, Esq.; 5. Cypripèdium Calcèolus, Mr. Edward Leeds; 6. *G*èum coccíneum, and 7. Aquilègia alpìna, Mr. J. Faulkner; 8. Pentstèmon ovàtus, Mr. George Cunningham; 9. *E*rìnus hispánicus, and 10. *Verónica* saxátilis, Mr. John Hulme.

Flowers. Tulips. Feathered Bizarres: 1. Charles the Tenth (premier), Mr. Bowley; 2. Charles the Tenth, Mr. William Gibson; 3. Surpasse-Catafalque, William Turner, Esq.; 4. Trafalgar, Mr. J. Hardman; 5. Dutch Catafalque, Mr. Bowley; 6. Duc de Savoie, Mr. John Winstanley; 7. Goud Beurs, C. Todd, Esq.; 8. Franklin's Washington, Mr. Bowley; 9. Rector, Mr. J. Hardman; 10. Firebrand, Mr. G. Vickers; 11. Surpasse-Tout, William Turner, Esq.; 12. Passe-Perfecta, Rev. Mr. Gilpin. — Flamed Bizarres: 1. Grandeur Magnifique (premier), John Morris, Esq.; 2. Surpasse la Cantique, William Turner, Esq.; 3. Bell's Lunardi, Mr. John Etches; 4. Albion, Richard Potter, Esq.; 5. Black Prince, Mr. James Faulkner; 6. Farrand's Liberty, William Turner, Esq.; 7. Lustre, Mr. James Faulkner; 8. Phœnix, Mr. John Etches; 9. Lord Crewe, Mr. Jos. Shepherd; 10. Charbonnier, Richard Potter, Esq.; 11. Garicola, T. Mottram, Esq.; 12. Coachman, William Turner, Esq. — Feathered Bybloemens: 1. Washington (premier), Mr. Bowley; 2. Black Baguet (Chad), Mr. John Taylor; 3. Bienfait, William Turner, Esq.; 4. Fonce e fonce, Mr. G. Vickers; 5. Ambassadeur, Mr. J. Hardman; 6. Washington, William Leighton, Esq.; 7. Surpassant, John Morris, Esq.; 8. Cato, Mr. H. Thomas; 9. Maître Partout, Mr. Josh. Shepherd; 10. Grand Sultan, Richard Potter, Esq.; 11. Violet Quarto, William Leighton, Esq.; 12. David Noir, Mr. George Vickers. Flamed Bybloemens: 1. Queen Charlotte (premier), Mr. T. Butler; 2. Queen Charlotte, William Leighton, Esq.; 3. Reveller, Rev. Mr. Gilpin. 4. Sable Rex, Mr. J. Shepherd; 5. Roi de Siam, and 6. Violet Wallers, Mr. J. Hardman; 7. Premier Noblet, William Leighton, Esq.; 8. Princess Charlotte, Mr. Henry Thomas; 9. Mr. Bowley; 10. Vulcan, Mr. S. Hall; 11. Duchess of Tuscany, R. Holland, Esq.; 12. Violet à fond Noir, Mr. S. Ogden. — Feathered Roses: 1. Triomphe Royal (premier), Mr. J. Hardman; 2. Comte de Vergennes, Mr. John Thackeray; 3. Triomphe Royal, Mr. Samuel Hall; 4. Do Little, William Leighton, Esq; 5. Duc de Bronte, Mr. Bowley; 6. Walworth, Mr. John Haigh; 7. Hero of the Nile, William Leighton, Esq.; 8. Lady Crewe, Mr. Samuel Hall; 9. Reine de Crimo, C. Todd, Esq.; 10. Thunderbolt, Mr. T. Butler; 11. Holden's Rose, Mr. J. Faulkner; 12. Reine des Fleurs, Mr. John Haigh. — Flamed Roses: 1. Rose Unique (premier), Mr. S. Ogden; 2. Rose Unique, Mr. John Clegg; 3. Lord Hill, T. Boothman, Esq.; 4. Rose Vesta, William Leighton, Esq.; 5. Duchess of Lancaster, Mr. T. Marvin; 6. Roi des Cerises, William Leighton, Esq.; 7. Rose infernal, Mr. S. Ogden; 8. Guerrier, and 9. Rose Quarto, William Leighton, Esq.;

10. Duchess of Newcastle, Mr. Thomas Butler; 11. Ruby, Mr. Bowley; 12. La Vandycken, Mr. John Haigh. — Selfs: 1. Isabella, Mr. John Clegg; 2. Seedling, William Turner, Esq.; 3. Mine d'Or, John Morris, Esq.; 4. Charbonnier, and 5. Sherwood's Rose, Mr. Thomas Butler; 6. White Flag, Mr. John Wilde.

Fruit. Pines: 1. Montserrat, Richard Potter, Esq.; 2. Montserrat, John Pooley, Esq.; 3. Montserrat, John Entwistle, Esq. — Grapes: 1. Black Hamburgh, 2. Lombardy, and 3. Sweetwater, Richard Potter, Esq.; 4. Black Hamburgh, R. I. I. Norreys, Esq. — Melons: Gregson, H. Wanklyn, Esq.

Culinary Vegetables. Cucumbers: 1. Longford, and 2. Incomparable, C. I. I. Walker, Esq.

Extra-Prizes. Flowers: Globe-flowered Georginas, Mr. John Jones. Scarlet Turban, Mr. G Cunningham.

MONMOUTHSHIRE.

Abergavenny and Crickhowel Horticultural Society. — June 24. Prizes were awarded as follows: —

Plants. Stove: 1. Gloxínia speciòsa, F. H. Williams, Esq.; 2. *V*ínca ròsea álba, 3. Hóya carnòsa, Mr. James Saunders. — Green-house: 1. Calceolària integrifòlia, 2. *G*naphàlium grandiflòrum, and 3. *N*èrium Oleánder álbum, Mr. James Saunders. — Hardy: 1. White Campanula, Thomas Paytherus, Esq.; 2. White Pæony, and 3. *M*ímulus, Mr. James Saunders. — Seedling Pelargonium, Mr. James Saunders.

Flowers. I'ris hispánica, John Wedgwood, Esq. (*The Cambrian*, July 9.)

Sept. 16. The following were among the prizes awarded: —

Plants. Stove: 1. Gloxínia maculàta, Mr. Saunders; 2. *V*ínca álba, and 3. *V*ínca ròsea, W. Morgan, Esq., Pant-y-Goitre. — Green-house: 1. Lophospérmum erubéscens, F. S. S. Woodhouse, Esq.; 2. Fúchsia grácilis, Mr. Saunders; 3. Fúchsia mexicàna, F. S. S. Woodhouse, Esq. — Hardy: 1. *Petùnia* nyctaginiflòra, 2. Lobèlia fúlgens, and 3. *D*elphínium píctum, Mr. Saunders. — Heaths: 1. *E*rìca multiflòra álba, and 2. *E*rìca multiflòra ròsea, Mr. Saunders.

Fruit. Apples. Dessert: 1. Nonpareil, J. F. Willis, Esq.; 2. Ribston Pippin, Mr. Saunders; 3. Golden Pippin, Rev. R. Davies. Culinary, Dutch Codlin, Mr. Woodall. (*Cambrian*, Oct. 1.)

NORFOLK.

Diss Horticultural Society. — June 9. The exhibition was very good indeed, and many choice specimens were sent from the gardens of the subscribers. Among those more particularly worthy of commendation were a very fine Calceolària integrifòlia from the Rev. Geo. Walker, Scole; some fine specimens of several sorts of Amarýllis, and a fine Cáctus speciòsa; and a cucumber of the serene [?] kind, measuring 20 in., and weighing full 2 lbs., from Thomas L. Taylor, Esq. The fruits and vegetables produced by the cottagers were of the best description; the strawberries, in particular, were equal, if not superior, to those exhibited from the gardens of their richer neighbours. Prizes were awarded as under: —

Peas (early nimble), Thomas Havers, Esq.

Cottagers' Prizes. Brompton Stock, Mr. Robert Downing; White, Mr. Simon Aldrich, Starston. (*Bury and Norwich Post*, June 15.)

CORRECTIONS

Vol. V., as noticed in Vol. VII.

In p. 289. line 15. for "one inch," read "one line," as advised vol. vii. p. 622.

In p. 680. line 25. for "Parfaite," read "Birthwaite," as shown vol. vii. p. 116.

Vol. VI., as noticed in Vol. VII.

In p. 640. line 10. from the bottom, for "Mr. Rigg, with his whole family," read "the family of Mr. Rigg," as shown vol. vii. p. 116.

Vol. VII.

In p. 18. line 4. after "This place," add "Verrières," as shown p. 659.

In p. 36. for "1821," read "1830."

In p. 57. line 3. from the bottom, for "that," read "those."

In p. 91. line 11. from the bottom, for "Montmirail," read "Montreuil."

In p. 101. line 36. for "Withy," read "Kitley."

In p. 121. line 17. for "pericardiums," read "pericarpiums."

In p. 121. lines 14. and 15. from the bottom, for "last Number, Vol. VI. p. 477.," read "*Magazine of Natural History*, Vol. III. p. 477.," as shown *Gard. Mag.*, vol. vii. p. 235.

In p. 201. line 21. from the bottom, for "G. Cunninghàmii," read as corrected, p. 506.

In p. 208. line 17. from the bottom, for "*E*rìca," read "È'ria."

In p. 223 for "Linfield," thrice mentioned, read "Lindfield;" and in line 21., for "an extract from the author of," read "an extract from a letter from the author of."

In p. 227. line 15. for "Mr. Joseph M'Nab," read "Mr. James M'Nab."

In p. 241. line 16. for "decayed," read "plethoric," as directed p. 378.

In p. 245. line 5. from the bottom, for "John H. Wynne, Esq., Caed Coch," read "John Lloyd Wynne, Esq., at Coed Coch."

In p. 246. line 9. for "when under-bark," read "when the under-bark;" line 12. for "all round from 3 to 6 ft. in height," read "all round for the length of from 3 to 6 ft. in different parts of the tree."

In p. 256. line 10., in p. 272. line 20., in p. 368. line 6., for "Mr. Collins," read "Mr. Colling," as shown p. 507.

In p. 376. for "Spa Botanic Gardens," read "Southampton Botanic Garden," as corrected p. 497.

In p. 395. line 2. from the bottom, for "Mamora," read "Marmora."

In p. 412. the "fig. 74." is repeated with corrections, p. 539.

In p. 519. line 6. for "*G*àlium uliginòsum," read "*G*àlium *M*ollùgo."

In p. 550. line 10. for "pines, the pines," read "pines, the vines."

In p. 551, 552. for "Mr. Tong," read "Mr. Tongue."

In p. 578. line 22. for "part it neatly," read "pare it neatly."

In p. 618. line 22. for "Mr. T. Machray," read "Mr. J. Machray."

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